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Draft Minerals Local Plan for Gloucestershire (2018-2032) Pre-publication Consultation Draft

Sustainability Appraisal including Strategic Environmental Assessment

Final Report
Prepared by LUC
September 2016

Project Title: Draft Minerals Local Plan for Gloucestershire Pre-publication Consultation Draft Sustainability Appraisal

Client: Gloucestershire County Council

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1 Introduction

1.1 This Sustainability Appraisal Report has been prepared by LUC, on behalf of Gloucestershire County Council (the Council) as part of the integrated Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) of the Gloucestershire Minerals Local Plan.

1.2 This report relates to the Gloucestershire Minerals Local Plan Pre-publication Consultation Draft (September 2016) (hereafter referred to as the "MLP Consultation Draft") and it should be read in conjunction with that document.

1.3 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. GCC adopted its Waste Core Strategy in November 2012. The County Council prioritised the Waste Core Strategy over the Mineral Core Strategy (MCS) in light of advice from the Government Office for the South West (GOSW). The National Planning Policy Framework (NPPF)[1] now advises (paragraph 156) that planning authorities should produce Local Plans and that a series of separate Development Plan Documents should only be produced where justified. Therefore, GCC is now producing the Minerals Local Plan (formerly the Minerals Core Strategy). Below is a list of the mineral related documents that have been produced in earlier stages:

- MCS Issues and Options consultation September 2006 - designed to generate public debate on mineral issues facing the county and to seek out possible ways of resolving them.
- MCS Preferred Options consultation January 2008 - involved setting out the 'direction of travel' for the planning framework and core policies.
- Minerals Local Plan Site Options and Draft Policy Framework consultation June 2014 – included a Spatial Strategy (with Vision and Strategic Priorities), options for safeguarding each of the main mineral resource blocks in the county (Limestone, Sandstone, Sand and Gravel, Clay and Coal), site options for potential allocations for crushed rock aggregates and sand and gravel and policies proposed to replace those in the 2003 Gloucestershire Minerals Local Plan. Some of the proposed policies were called Strategic Policy Aims and were more higher level strategic policies. The remaining majority of the policies were intended to be used for development management purposes and covered all of the policy issues covered in the 2003 Gloucestershire Minerals Local Plan

1.4 The current MLP Consultation Draft (September 2016) now includes a Vision and Objectives, overall strategy, delivery polices for the plan's themes: reducing the demand for primary minerals safeguarding mineral resources; making provision for the supply of minerals; and allocating areas for future aggregate working; restoration, aftercare and facilitating beneficial after-uses; and a suite of development management policies.

1.5 The preparation of the Minerals Local Plan is subject to a full Sustainability Appraisal (SA), in line with the Planning and Compulsory Purchase Act 2004 and current Government planning policy (the NPPF). The preparation of the Minerals Local Plan must also be in accordance with the requirements of European Directive 2001/42/EC (known as the Strategic Environment Assessment, or SEA Directive).

1.6 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 MLP Consultation Draft (September 2016). In particular, this report documents the potential sustainability implications of implementing the Gloucestershire Minerals Local Plan.

[1] DCLG (March, 2012). National Planning Policy Framework.

Sustainability Appraisal and Strategic Environmental Assessment

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

1.8 Sustainability Appraisal is a statutory requirement of the Planning and Compulsory Purchase Act 2004. It is designed to ensure that the Development Plan Document (DPD) preparation process maximises the contribution that a plan makes to sustainable development and minimises any potential adverse impacts. The SA process appraises the likely social, environmental and economic effects of the strategies and policies within a DPD (in this case the Gloucestershire MLP) from the outset of its development.

1.9 Strategic Environmental Assessment is also a statutory assessment process, required under the SEA Directive[2], transposed in the UK by the SEA Regulations (Statutory Instrument 2004, No 1633). The SEA Regulations require the formal assessment of plans and programmes which are likely to have significant effects on the environment, and set the framework for future consent of projects requiring Environmental Impact Assessment (EIA)[3]. The purpose of SEA, 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'*.

1.10 SEA and SA are separate processes but have similar aims and objectives. Simply put, SEA focuses only on the likely environmental effects of a plan whilst SA includes a wider range of considerations, extending to social and economic impacts. The Government's Sustainability Appraisal guidance[4] outlines how it is possible to satisfy both requirements by undertaking a joint SA/SEA process, and to present an SA report that incorporates the requirements of the SEA Regulations.

1.11 **Table 1.1** signposts how the requirements of the SEA Directive have been met within this SA report.

Table 1.1.1 Requirements of the SEA Directive and where these have been addressed in this SA Report

SEA Directive Requirements	Where covered in this SA report
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	Chapters 2 and 3 provide an outline of the main objectives of the MLP, Appendix 3 outlines its relationship with other relevant plans and programmes.
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme	Chapter 3 and Appendix 4.

[2] SEA Directive 2001/42/EC

[3] Under EU Directives 85/337/EEC and 97/11/EC concerning EIA.

[4] DCLG (2014) Planning Practice Guidance. Available at: http://planningguidance.planningportal.gov.uk/blog/guidance/strategic-environmental-assessment-and-sustainability-appraisal/strategic-environmental-assessment-and-sustainability-appraisal-and-how-does-it-relate-to-strategic-environmental-assessment/

SEA Directive Requirements	Where covered in this SA report
c) The environmental characteristics of areas likely to be significantly affected	Chapters 3 and 5, and Appendix 4.
d) 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.	Chapter 3 – Key Sustainability Issues.
e) 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	Appendix 3.
f) 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 5 and Appendices 5 and 6.
g) 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 5 and Appendices 5 and 6.
h) 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;	Chapter 2 and Appendix 2.
i) A description of measures envisaged concerning monitoring in accordance with Art. 10;	Chapter 6.
j) A non-technical summary of the information provided under the above headings	A separate non-technical summary document has been produced to accompany this SA report.
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)	Addressed throughout this SA report.
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)	Consultation on the SA Scoping Report for the Gloucestershire MLP was undertaken in 2013.

SEA Directive Requirements	Where covered in this SA report
• 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 has been undertaken in relation to each stage of the Minerals Local Plan preparation, accompanied by SA reports and notes as described in Chapter 2.
• 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).	N/A
Taking the environmental report and the results of the consultations into account in decision-making (Art. 8)	
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 after the Minerals Local Plan is adopted.
Monitoring of the significant environmental effects of the plan's or programme's implementation (Art. 10)	Chapter 6
Quality assurance: environmental reports should be of a sufficient standard to meet the requirements of the SEA Directive (Art. 12).	This report has been produced in line with current guidance and good practice for SEA/SA and this table demonstrates where the requirements of the SEA Directive have been met.

Background

1.12 Gloucestershire County Council began undertaking SA work for the MWDF 'in-house' in terms of both the development of the SA Framework and the production of SA Reports. **Table 1.2** below sets out the SA Reports that have been produced by GCC and LUC to date as part of the development of the SPD on Waste Minimisation in Development Projects (adopted in September 2006), the Waste Core Strategy (adopted in November 2012) and the Minerals Local Plan. All of the reports produced to date are available on GCC's website[5]. Those SA reports specifically relevant to the Minerals Local Plan have been highlighted in bold.

[5] Available at: http://www.gloucestershire.gov.uk/extra/article/108054/Sustainability-Appraisal-SA and http://www.gloucestershire.gov.uk/extra/MLP-site-policy-options

Table 1.1.2: 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
Update 4 SA Scoping Report	**July 2013**
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**
SA Report for the Waste Core Strategy Site Options (Stage 1)	April 2009
SA Report for the Waste Core Strategy Site Options (Stage 2)	September 2009
SA Report for the Waste Core Strategy	November 2010
SA Report Update for the Waste Core Strategy – Focused Changes	June 2011
SA Report for the Minerals Local Plan Site Options and Draft Policy Framework	**June 2014**
SA Addendum for Additional Site Option	**January 2015**

Aim and structure of the report

1.13 This report is the SA/SEA report for the MLP Consultation Draft (September 2016). It has been prepared in the spirit of the integrated approach to SEA and SA, and throughout the report, the abbreviation 'SA' should therefore be taken to refer to 'SA incorporating the requirements of SEA'.

1.14 This chapter provides an introduction to the SA of Gloucestershire MLP. The remainder of this report is structured into the following chapters:

- **Chapter 2 – Methodology**, describes the stages of the SA process and the approach used for the specific SA tasks.

- **Chapter 3 – Sustainability context for minerals development in Gloucestershire**, summarises the MLP's relationship with other relevant plans, policy and strategies, summarises the social, economic and environmental characteristics of Gloucestershire, and identifies the key sustainability issues relating to mineral development within Gloucestershire.
- **Chapter 4 – Sustainability Appraisal framework and assumptions**, describes the SA Framework and the assumptions used for assessing the potential sustainability effects of the MLP (including both the minerals site options and policy options).
- **Chapter 5 – Sustainability Appraisal findings**, sets out the main findings from the SA of the Gloucestershire MLP Pre-publication Consultation Draft (September 2016) Vision, Objectives, Policies and Site Allocations. It draws conclusions from the findings of the appraisals and makes some recommendations for the MLP to maximise the benefits of the plan and minimise any adverse effects.
- **Chapter 6 – Monitoring**, makes recommendations regarding the approach to monitoring the significant sustainability effects of implementing the MLP.
- **Chapter 7 –Conclusions**, summarises the key findings from the SA in terms of any significant sustainability effects predicted (positive or negative) from implementing the MLP.

2 Methodology

2.1 In addition to complying with legal requirements, the approach taken to the SA of the Gloucestershire MLP is based on current best practice and the following guidance:

- Practical Guide to the SEA Directive, Office of the Deputy Prime Minister (September 2005).
- Sustainability Appraisal guidance included in DCLG's Plan Making Manual, Planning Advisory Service website (last updated September 2009). *Note this guidance was used for earlier stages of the SA, but has been superseded by the recent National Planning Practice Guidance published March 2014, which has been referred to since then.*
- Sustainability Appraisal guidance included in the Government's National Planning Practice Guidance website (2014)[6].

2.2 The government guidance introduces the SA process and explains how to carry out SA as an integral part of the plan-making process. **Table 2.1** sets out the main stages of the plan-making process and shows how these correspond to the SA process.

Table 2.1 Corresponding stages in plan making and SA

Local Plan Step 1: Pre-production - Evidence Gathering
SA stages and tasks
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 • A2: Collecting baseline information • A3: Identifying sustainability issues and problems • A4: Developing the SA Framework • A5: Consulting on the scope of the SA
Local Plan Step 2: Production
SA stages and tasks
Stage B: Developing and refining options and assessing effects • B1: Testing the Plan objectives against the SA Framework • B2: Developing the Plan options • B3: Predicting the effects of the Plan • B4: Evaluating the effects of the Plan • B5: Considering ways of mitigating adverse effects and maximising beneficial effects • B6: Proposing measures to monitor the significant effects of implementing the Plans
Stage C: Preparing the Sustainability Appraisal Report • C1: Preparing the SA Report

[6] http://planningguidance.planningportal.gov.uk/blog/guidance/strategic-environmental-assessment-and-sustainability-appraisal/

Stage D: Consulting on the Draft Plan and the Sustainability Appraisal Report • D1: Public participation on draft Plan and the SA Report • D2(i): Appraising significant changes
Local Plan Step 3: Examination
SA stages and tasks
• D2(ii): Appraising significant changes resulting from representations
Local Plan Step 4 & 5: Adoption and Monitoring
SA stages and tasks
• D3: Making decisions and providing information
Stage E: Monitoring the significant effects of implementing the Plan • E1: Finalising aims and methods for monitoring • E2: Responding to adverse effects

Stage A: Scoping

2.3 GCC undertook the Scoping stage of the SA for the MLP in-house. The original Context Report and Scoping Report for the SA of the Gloucestershire MWDF were subject to consultation for five weeks from 25th August to 29th September 2005. As the GCC Sustainability Appraisal Scoping Report was last updated in 2009, an update on the Sustainability Appraisal Scoping Report was required to address the resumed work on the MLP. GCC updated the Scoping Report early in 2013, with a final version published in July 2013[7]. This updated Scoping Report set 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 (objectives) against which potential effects will be assessed.

2.4 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[8]. These SA objectives are distinct from the strategic objectives of the MLP; instead the MLP's performance in terms of sustainability is appraised against the SA objectives. The SA objectives went through a series of iterations and changes based on consultation responses and responding to the content of different documents in the MWDF (e.g. the need to appraise potential waste or mineral sites in addition to general policies for minerals or waste). The development of the SA Framework which has been used for the appraisal of the MLP, including the minerals site options, is discussed further in **Chapter 4**.

2.5 Public and stakeholder participation is an important element of the SA and wider plan-making processes. It helps to ensure that the SA reports are robust and have due regard for all appropriate information that will support the plan in making a contribution to sustainable development. The SA Scoping Report was published for a five week consultation period with the statutory consultees under the SEA Regulations (Natural England, the Environment Agency and English Heritage (now Historic England)). The consultation ran from 27th March to 2nd May 2013. GCC updated the Scoping Report after the consultation to address and take account of all responses received during the consultation (see **Appendix 1** for the summary of consultation

[7] Gloucestershire County Council (July 2013). Gloucestershire Minerals Local Plan, Sustainability Appraisal, Scoping Report Update 4.

[8] The ODPM SA Guidance explained 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).

responses received and how they have been addressed). The relevant sections from the Scoping Report have been incorporated into this SA Report in order to meet the requirements of the SEA Directive (as set out in **Table 1.1**). The baseline information and plans and programmes review contained in Appendices 3 and 4, have been updated in 2016 by GCC.

Stage B: Developing and Refining Options and Assessing Effects

2.6 Developing options for a plan is an iterative process undertaken by the local planning authority usually involving a number of consultations with public and stakeholders. Consultation responses and the SA can help to identify where there may be other 'reasonable alternatives' to the options being considered for a plan (e.g. additional sites that may be suitable for development, as came forward during the 2014 MLP consultation). The SA can also help decision makers by identifying the potential positive and negative sustainability effects of each option.

2.7 Regulation 12 (2) of the SEA Regulations requires that:

"The (environmental or SA) report must identify, describe and evaluate the likely significant effects on the environment of —

(a) implementing the plan or programme; and

(b) reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme"

2.8 It should be noted that any alternatives considered to the plan need to be "reasonable". This implies that alternatives that are "not reasonable" do not need to be subject to appraisal. Examples include alternatives that do not meet the objectives of the plan or national policy (e.g. the NPPF), or are not within the geographical scope of the plan. In addition, the SEA Regulations do not require all reasonable alternatives to be subject to appraisal, just "reasonable alternatives" as determined by the MPA.

2.9 It also needs to be recognised that the SEA and SA findings are not the only factors taken into account when determining a preferred option to take forward in a plan. There will often be an equal number of positive or negative effects identified for each option, such that it is not possible to 'rank' them based on sustainability performance in order to select a preferred option. Factors such as public opinion, deliverability, conformity with national policy will also be taken into account by plan-makers when selecting preferred options for their plan.

Alternatives considered in the preparation of the MLP to date

2.10 The options or reasonable alternatives considered during development of the MLP Consultation Draft (September 2016) included the alternative policy approaches for the strategic policies and general development management policies, and a number of minerals site options. While GCC has made a decision to prepare a new style MLP, there have been two previous stages of developing and refining minerals planning options as part of the earlier work on the MWDF as outlined below. **Appendix 2** sets out in more detail the audit trail of the reasonable alternatives considered and discounted by GCC for each policy area in the MLP at each stage in its development.

Minerals Core Strategy Issues & Options (2005-2007)

2.11 The initial Issues and Option stage began in 2005 with the publication of a Newsletter to generate public debate and interest on minerals issues facing Gloucestershire. Evidence gathering and data collection exercises followed, along with two local stakeholder forums in July 2006. These forums sought to stimulate public interest and debate on important local issues affecting Gloucestershire's key mineral resource areas. The key topics debated included: the spatial vision and strategic objectives for the Core Strategy; the future of aggregate working across the County; and important local issues affecting communities in and around the mineral resource areas of the Cotswolds, Forest of Dean, and Upper Thames Valley.

2.12 The outcomes of forums were collated and views and ideas expressed were incorporated into two Issues and Options consultation papers which were published in September 2006[9]. Known as 'Part A' and 'Part B', these documents comprised an accessible jargon-free paper and a more detailed data and policy context paper. Both documents covered the same issues, and comprised the following sections:

- Section 1: A general introduction.
- Section 2: A spatial portrait of Gloucestershire.
- Section 3: Minerals planning policy background.
- Section 4: Minerals in Gloucestershire, including information on geology, resources, sales, sites and reserves.
- Section 5: A presentation of the issues and options -

2.13 Twelve key issues were identified for the MCS in Section 5 of the Issues and Options consultation paper, as follows, and each had a number of options set out for dealing with the issue:

- Issue M1: Determining the time period over which the MCS operates.
- Issue M2: Setting an appropriate spatial vision and objectives for the MCS.
- Issue M3: Meeting objective 1 – 'Identifying, conserving and safeguarding Gloucestershire's finite mineral resources from unnecessary sterilisation by other forms of development.'
- Issue M4: Meeting objective 2 – 'Ensuring that appropriate provision is made to meet the local, regional and national demand for minerals from sustainable resources in Gloucestershire' (included options for crushed rock, sand and gravel, building stone, clay and coal).
- Issue M5: Meeting objective 3 – 'Protecting where possible the natural, historic and cultural assets of Gloucestershire.'
- Issue M6: Meeting objective 4 – 'Ensuring that mineral sites are restored to the highest possible standard that is capable of providing for a range of sustainable after-uses, and that this is done as quickly as possible.'
- Issue M7: Meeting objective 5 – 'Securing enforceable, sound working practices that minimise the adverse impacts of mineral developments on the local communities, the local economy and environment of Gloucestershire.'
- Issue M8: Meeting objective 6 – 'Encouraging the efficient working of mineral resources.'
- Issue M9: Meeting objective 7 – 'Promoting the maximum use of recycled materials in preference to non-renewable primary minerals, where possible.'
- Issue M10: Meeting objective 8 – 'Encouraging more sustainable ways of transporting minerals other than by road.'
- Issue M11: Meeting objective 9 – 'Promoting closer working with neighbouring authorities to develop a consistent policy approach for the future working of strategic mineral resources.'
- Issue M12: Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA)

2.14 The options considered for each of the key issues are listed in **Appendix 2** of this SA Report, along with a summary of the SA findings from the Issues and Options SA Report (2006), and the reasons for selecting or discounting each option to take forward to the next stage (Preferred Options).

Minerals Core Strategy Preferred Options (2008)

2.15 The Minerals Core Strategy Preferred Options consultation document was published in January 2008, based on the outcomes of the Issues and Options consultation and evidence gathered. This involved setting out the 'direction of travel' for the planning framework and core policies. The

[9] Gloucestershire County Council (2006). Minerals Core Strategy Issues and Options A and B. Available at: http://www.gloucestershire.gov.uk/extra/article/107650/1-MCS-Issues--Options---COMPLETE

document set out a spatial vision, strategic objectives, as well 14 Preferred Options for the Minerals Core Strategy policies under the following headings:

- Provision & Supply
- Reuse & Recycling
- The Environment
- People
- Reclamation
- Resource Management
- Transport

2.16 A public consultation on the Preferred Options version of the Minerals Core Strategy and the accompanying SA Report took place between 31st January 2008 and 13th March 2008. A number of technical evidence papers were also prepared to support the consultation[10].

2.17 The Preferred Options set out in the 2008 Preferred Options Consultation document are listed in **Appendix 2** of this SA Report, showing how they relate to the options considered in the 2006 Issues and Options consultation document. A summary of the SA findings from the Preferred Options SA Report (2008) is also included in Appendix 2.

Minerals Local Plan Site Options and Draft Policy Framework Consultation Document (June 2014)

2.18 This stage of consultation for the new style Minerals Local Plan was intended to draw together the outcomes of the earlier two MCS consultation stages above, along with some new and up-to-date evidence in a format that enabled further input from stakeholders prior to a draft of the plan being produced.

2.19 Where certain aspects of the plan had already been consulted upon in 2006 and 2008 (such as the Vision, Strategic Objectives and preferred policy options) some preferred policy approaches were suggested in the 2014 MLP Consultation Document. However, some aspects of the plan were totally new (such as the inclusion of potential site allocations and minerals safeguarding) and these areas were presented to stakeholders as individual options in the 2014 MLP Consultation Document.

2.20 The 2014 MLP Consultation Document included the following elements:

Section 1 Introduction

Section 2 Spatial Strategy

- Proposed Spatial Vision
- Proposed Strategic Priorities: 1 - 7
- Proposed Policy on Presumption in Favour of Sustainable Development

Section 3 Mineral Safeguarding

- Options for Safeguarding the Limestone Resource (four options)
- Options for Safeguarding the Sandstone Resource (five options)
- Options for Safeguarding the Sand and Gravel Resource (five options)
- Options for Safeguarding the Clay Resource (four options)
- Options for Safeguarding the Coal Resource (three options)
- Proposed Policy for Minerals Safeguarding Areas
- Proposed Standing Advice for implementation of the Policy for Mineral Safeguarding Areas

[10] Available at: http://www.gloucestershire.gov.uk/extra/article/107668/Evidence-Base-for-the-MCS

- Proposed Safeguarding Policy for Minerals Infrastructure

Section 4 Aggregate Mineral Supply

- Strategic Policy Aim for Primary Aggregate Minerals-Meeting the Need
- Strategic Policy Aim for Primary Aggregate Minerals - Identifying Future Supply Areas
- Proposed Policy for Preferred Areas for Aggregates (including 18 proposed site options)
- Proposed Policy for Proposals for the Working of Aggregates Outside of Preferred Areas
- Strategic Policy Aim for Alternative Aggregates

Section 5 Non-Aggregate Minerals

- Proposed Policy for Building Stone
- Proposed Policy for Brick Clay
- Proposed Policy for Engineering Clay
- Proposed Policy for Small Scale Coal Underground Mines
- Proposed Policy for Opencast Coal
- Proposed Policy for Re-working of Colliery Spoil Tips
- Proposed Policy for Conventional and Unconventional Hydrocarbons

Section 6 Environmental Considerations

- Proposed Policy for Flood Risk
- Proposed Policy for Water Quality
- Proposed Landscape Policy
- Proposed policy for Mineral Working in the Green Belt
- Proposed Policy for Biodiversity & Geodiversity
- Proposed Policy for the Historic Environment
- Proposed Development Management Criteria for the Historic Environment
- Proposed Policy for Sustainable Transport

Section 7 Minerals Restoration

- Proposed Strategic Aim for the Cotswold Water Park
- Proposed Restoration Policy
- Proposed Development Management Restoration Policy

Section 8 Development Management Policies

- Proposed Policy for Mitigation of Environmental Effects
- Proposed Policy for Ancillary Development
- Proposed Policy for Safeguarding Aerodromes
- Proposed Policy for Planning Obligations
- Proposed Policy for Borrow Pits
- Proposed Policy for Cumulative Impact
- Proposed Policy for Soils
- Proposed Policy for Public Rights of Way
- Proposed Policy for Buffer Zones

Section 9 Implementation and Monitoring

2.21 Each of the proposed vision, strategic objectives, policies, strategic aims and site options were subjected to appraisal against the SA objectives and reported on in the 2014 SA Report. The vision, strategic objectives, policies and site options in the 2014 Consultation document are listed in **Appendix 2** of this SA Report, showing how they relate to the options considered in the 2008 Preferred Options consultation document. A summary of the SA findings from the 2014 SA Report is also included in Appendix 2, along with an explanation of any changes that have been made to the vision, objectives and policies in the 2016 MLP Consultation Draft, and the reasons for selecting or discounting site options for inclusion as Allocations.

Stage C: Preparing the sustainability appraisal report

2.22 This SA Report describes the process undertaken to date in carrying out the SA of the Gloucestershire MLP. It sets out the findings of the appraisal, highlighting any likely significant effects (both positive and negative, and taking into account the likely secondary, cumulative, synergistic, short, medium and long-term and permanent and temporary effects), making recommendations for improvements and clarifications that may help to mitigate negative effects and maximise the benefits of the plan, and outlining proposed monitoring measures.

2.23 Each draft policy and site allocation in the July 2016 MLP Consultation Draft was assessed against each SA objective, and a judgement was made with regards to the likely effect that the site/option would have on that objective. These judgements were recorded as a colour coded symbol, as shown below in **Figure 2.1**. The sustainability effects are presented in a matrix for each policy or site allocation, in **Appendices 5 and 6** respectively, along with a brief justification of the judgement made.

Figure 2.1 Key to symbols and colour coding used in the SA of the 2016 MLP Consultation Draft

++	The policy or site allocation is likely to have a **significant positive** impact on the SA objective(s).
+	The policy or site allocation is likely to have a **minor positive** impact on the SA objective(s).
0	The policy or site allocation is likely to have a **negligible or no impact** on the SA objective(s).
+/-	The policy or site allocation is likely to have a **mixture of positive and negative** impacts on the SA objective(s).
–	The policy or site allocation is likely to have a **minor negative** impact on the SA objective(s).
– –	The policy or site allocation is likely to have a **significant negative** impact on the SA objective(s).
?	It is **uncertain** what effect the policy or site allocation will have on the SA objective(s).

Stage D: Consultation on the Gloucestershire Minerals Local Plan Pre-publication Consultation Draft (September 2016) and this SA Report

2.24 GCC is inviting comments on the August 2016 MLP Consultation Draft and this SA Report in advance of the formal consultation stage under Regulations 19 and 20 of the Town and Country Planning (Local Planning) (England) Regulations 2012 (Statutory Instrument 2012 No. 767).

Stage E: Monitoring Implementation of the DPD

2.25 Stage E will follow adoption of the MLP. LUC has not been commissioned to undertake the SA monitoring. However, the SEA Regulations and the Government's SA Guidance require that the Sustainability Report includes a description of measures envisaged concerning monitoring. This is discussed in **Chapter 6**.

3 Sustainability context for minerals development in Gloucestershire

Review of Plans, Policies and Programmes

3.1 This section addresses the SEA Directive requirements in Annex I:

- (a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes; and
- (e) the environmental protection objectives, established at international, Community or Member State level which are relevant to the plan or programme and the way those objectives and any environmental considerations have been take account during its preparation.

Outline of the Gloucestershire MLP

3.2 The MLP Consultation Draft (September 2016) is the next stage of consultation for the Gloucestershire MLP which will be a plan for the future development of minerals in Gloucestershire.

3.3 The MLP Consultation Draft (September 2016) draws together the outcomes of earlier consultation stages along with new and up-to-date evidence. Where aspects of the plan have already been consulted upon (such as the Vision) some preferred policy approaches are suggested.

3.4 The MLP Consultation Draft (September 2016) includes:

- Section 1 – an introduction to minerals planning within Gloucestershire and discussion concerning the preparation of a new minerals local plan for the county.
- Section 2 – a spatial portrait that describes present day Gloucestershire and introduces the minerals likely to be of economic importance over the plan period.
- Section 3 – the drivers for change that the minerals plan will seek to reflect and act upon where necessary and appropriate, principally to the advantage of Gloucestershire.
- Section 4 – the plan's vision of the future that highlights what success may look like, and the objectives that will explain how, through targeted actions, the vision will be achieved.
- Section 5 – the overall strategy for the plan, which details the policy framework and strategic approach being taken to deliver the plan's objectives.
- Sections 6, 7, 8 and 9 – these sections make up a substantial part of the plan's core policy content. They include the delivery polices for the plan's themes: – reducing the demand for primary minerals (section 6); safeguarding mineral resources (section 7), making provision for the supply of minerals (section 8); and allocating areas for future aggregate working (section 9).
- Sections 10 and 11 – complete the plan's core policy and include the full suite of development management policies (section 10). The plan's final theme – restoration, aftercare and facilitating beneficial after-uses (section 11) is also included.
- Section 12 – explains how the plan will be monitored to ensure it is working effectively and contributing the delivery of the strategy, objectives and spatial vision.

Relationship between Gloucestershire MLP and other relevant plans and programmes, including their environmental protection objectives

3.5 The Gloucestershire MLP is not prepared in isolation, being greatly influenced by other plans, policies and programmes and by broader sustainability objectives. It needs to be consistent with international and national guidance and strategic planning policies and should contribute to the goals of a wide range of other programmes and plans, such as those relating to social policy, culture and heritage. It must also conform to environmental protection legislation and the sustainability objectives established at an international, national and regional level.

3.6 A review has been undertaken of the other plans, policies and programmes that are relevant to the MLP. The purpose of the review of other plans and strategies is to consider how they will influence the preparation of the MLP and the SA. **Table 3.1** below lists relevant plans, programmes and strategies. The list is not, and cannot be exhaustive. The review has only sought to identify key documents which reflect local, regional, national and international social, economic and environmental issues. **Appendix 3** details the relationship that the following plans and policies have with the development of the MLP and the SA, and also shows how the environmental, social and economic objectives have been taken into account during preparation of the MLP and also the SA.

3.7 The most significant development in terms of the policy context for the MLP was the 2012 publication of the NPPF which replaced the suite of Planning Policy Statements (PPSs) and Planning Policy Guidance (PPGs), including Minerals Policy Statements and Minerals Policy Guidance documents. A number of the replaced documents were reviewed as part of the Lord Taylor review of planning guidance. The aim of the review was 'to support effective planning; what new or updated practice guidance should be published, with clear priorities; and what guidance should be cancelled.' This resulted in the publication of national Planning Practice Guidance[11] (PPG) as a streamlined web-based resource that accompanies the NPPF. This ensures that planning practice guidance supports national planning policy. A large majority of past guidance has been included in the recently published guidance, however, many guidance documents have also been cancelled.

3.8 The Gloucestershire MLP must be consistent with the requirements of the NPPF, which sets out information about the purposes of local plan-making. It states that:

3.9 "Local Plans must be prepared with the objective of contributing to the achievement of sustainable development. To this end, they should be consistent with the principles and policies set out in this Framework, including the presumption in favour of sustainable development."

3.10 While the NPPF replaces the suite of Minerals Policy Statements, the principles for minerals planning are still retained in the NPPF including: the maintenance of landbanks for crushed rock and sand and gravel; designation of Mineral Safeguarding Areas; providing for restoration and aftercare at the earliest opportunity and to high environmental standards; and setting out environmental criteria against which planning applications will be assessed.

Table 3.1: Relevant plans, policies and documents

International / European
EU SEA Directive
The World Summit on Sustainable Development, Johannesburg 2002 – Commitments arising from the Summit
EU Air Quality Framework Directives
EU Seventh Environmental Action Plan
EU Drinking Water Directive

[11] DCLG (2014). Planning Practice Guidance. Available at: http://planningguidance.planningportal.gov.uk/

EU Water Framework Directive
EU Bathing Water Quality Directive
EU Birds and Habitats Directives (i.e. The Birds Directive (2009/147/EC) and EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC))
EU Biodiversity Strategy to 2020
EU Management of waste from extractive industries (2006/21/EC)
EU Waste Framework Directive
IPCC's Fourth Assessment Report on Climate Change
National
National Planning Policy Framework (NPPF) (March 2012)
Planning for Freight on Inland Waterways
DEFRA Natural Environment and Rural Communities Act 2006 – Section 41: List of Habitats and Species of Principal Importance in England 2008
The Conservation of Habitats and Species Regulations 2010 (as amended)
Biodiversity 2020 – A strategy for England's wildlife and ecosystem services.
Natural Environment White Paper
Securing the Future: Delivering UK Sustainable Development Strategy
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland
The UK Low Carbon Transition Plan
Carbon Plan: Delivery our low carbon future
A Strategy for England's Trees, Woods and Forests
The Sustainable Communities Plan
National Trails Publication
A Development Plan for Marine Aggregate Extraction
Underground, Under threat – Groundwater Protection: Policy and Practice
Flood and Water Management Act 2010
Planning for the Supply of Natural Building Stone
Collation of the Results of The 2009 Aggregate Mineral Survey for England and Wales
Climate Change Act 2008
Minerals Extraction and the Historic Environment 2008
Minerals Extraction and Archaeology: A Practice Guide 2008

Strategic / Sub-National
South West Nature Map
Wessex Water Resources Draft Management Plan
Thames Water Resources Management Plan
Severn Trent Water Draft Resources Management Plan
Draft Welsh Water Resources Management Plan
Draft Bristol Water Resources Management Plan
Severn River Basin Management Plan
Thames River Basin Management Plan
County & Local
Gloucestershire Strategic Flood Risk Assessment for Minerals & Waste Development Framework
Gloucestershire Landscape Character Assessment
A Strategic Framework for Green Infrastructure (Gloucestershire) – 2015
Gloucestershire Nature Map
Gloucestershire Cotswolds Audit & Local Geo-diversity Action Plan 2005
West Gloucestershire Audit & Local Geo-diversity Action Plan (March 2008)
Local Agenda 21 Strategy for a Sustainable Gloucestershire
Gloucestershire's Local Transport Plan (2015-2031)
Gloucestershire Strategic Economic Plan (SEP)
Gloucestershire Biodiversity Framework and Delivery Plan 2010
Cotswold Water Park Biodiversity Action Plan 2007 – 2016
Cotswold Water Park Supplementary Planning Guidance
Gloucester-Cheltenham-Tewkesbury Joint Core Strategy: GCT-JCS (Submission Version – November 2014)
Gloucester City Plan (Pre-Publication Draft Version: March 2012 – July 2013)
Tewkesbury Borough Local Plan to 2011 (Adopted – March 2006)
Tewkesbury Borough Local Plan (Pre-Publication Draft Version – February 2015)
Tewkesbury Borough Flood and Water Management Supplementary Planning Document (Adopted – December 2014)
Stroud District Local Plan (Adopted – November 2015)
Cheltenham Borough Plan 2nd Review (Adopted – June 2006)

The Cheltenham Plan (Pre-Publication Draft Version – August 2015)
Forest of Dean Core Strategy (Adopted – May 2013)
Cotswold District Local Plan 2001-2011 (Adopted – April 2006)
Cotswold District Local Plan (Submission Version – June 2016)

Baseline Information

3.11 This section addresses the SEA Directive requirements in Annex I:

- (b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme; and
- I the environmental characteristics of areas likely to be significantly affected.

3.12 Baseline information provides the context for assessing the sustainability of proposals in the MLP and it provides the basis for identifying trends, predicting the likely effects of the plan and monitoring its outcomes. The requirements for baseline data vary widely, but it must be relevant to environmental, social and economic issues, be sensitive to change and should ideally relate to records which are sufficient to identify trends.

3.13 The baseline data focuses on key indicators which are readily available and can be updated to demonstrate the issues. The choice of baseline data has been informed by the previous stages in the SA process. Potentially a key limitation of the SA process is gaps in baseline data. Government guidance on SA takes a pragmatic view in advising that it is acceptable to have data gaps, but that the resulting risks should be documented. **Appendix 4** of this report provides an extensive discussion on the relevant baseline information for the County and in particular the role of minerals development.

3.14 Annex 1(f) of the SEA Directive requires data to be gathered on biodiversity, population, human health, flora, fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the inter-relationship between the above factors (these are often referred to as 'SEA Topics'). As an integrated SA and SEA is being carried out, baseline information relating to other 'sustainability' topics has also been included; for example information about housing, social inclusiveness, transport, energy, minerals and economic growth.

3.15 **Table 3.2** describes the potential effects of minerals development on the SEA Topics and also the likely future environmental status if the Gloucestershire MLP were not prepared (in order to meet part of the requirement of Annex 1b of the SEA Directive).

Table 3.2: Potential environmental effects of minerals development and likely future evolution of the environment in the absence of the Gloucestershire MLP

SEA Topic (SEA Directive 2001/42/EC Annex 1 (f))	Potential effects of minerals and waste development & likely future environmental (or other) status in the absence of the Gloucestershire MLP
Biodiversity, Flora, Fauna and Soil	Gloucestershire is a highly diverse County with a great variety of wildlife reflected in the large number of sites that have international, national or local designations. Biodiversity outside these areas should also not be neglected as habitats that have a linking function are very important. Potential negative effects are: • Impacts on ecosystem services such as flood defences, water purification, soil formation and

SEA Topic (SEA Directive 2001/42/EC Annex 1 (f))	Potential effects of minerals and waste development & likely future environmental (or other) status in the absence of the Gloucestershire MLP
	pollination. • Potential loss of protected species and loss/deterioration of priority habitats. • Habitat deterioration loss and/or fragmentation due to land take. • Changes in soil conditions and or quality or loss of best and most versatile soils. • Changes in the quality of air and water. Pollution potential in terms of noise, vibration, light, dust, air and water pollutants. • Creation of barriers or obstacles affecting wildlife. • Changes in methods of habitat management. • Introduction of new species / habitats. • Changes in ecological balances of prey and predators. • Changes in patterns of human activity. <u>Comment on the likely future environmental status in the absence of the MLP:</u> Minerals plans aim to provide for the needs of society (i.e. minerals which we all use). But in the process there may be damage to the natural environment. However plans contain policies which aim to protect and enhance the environment. Without these plans it is more likely that environmental designations would be damaged by un-planned development which is not likely to be the most sustainable option, and the opportunity to enhance the environment, and protect and improve environmental networks would be severely limited.
Water	Quarrying may have significant negative impacts on the water table and on surface water regimes. This is a particularly pertinent issue in Gloucestershire in relation to sand and gravel extraction in the Upper Thames Valley. <u>Comment on the likely future environmental status in the absence of the MLP:</u> In the absence of the MLP and policies aimed at the protection of the water environment, rivers, streams, lakes as well as subterranean hydrological regimes are more likely to be damaged as a result of un-regulated and environmentally insensitive development.
Air	Traffic associated with mineral sites can increase dust and odour. <u>Comment on the likely future environmental status in the absence of the MLP:</u> Air quality may deteriorate in the County in the absence of policies which aim at the control and mitigation of the problem.

SEA Topic (SEA Directive 2001/42/EC Annex 1 (f))	Potential effects of minerals and waste development & likely future environmental (or other) status in the absence of the Gloucestershire MLP
Climatic factors	Mineral products are, to a large extent, carried by road transport – emissions from which have negative impacts on the climate. Comment on the likely future environmental status in the absence of the MLP: In the absence of the MLP and specific policies aimed at combating climate change and reducing the impacts, it is likely that contributions to climate change from minerals development will not be appropriately controlled and mitigated.
Material assets	Minerals development may affect the value of nearby land, property or other material assets. This may also apply to land and property that lies on a lorry route. In terms of aerodromes (as material assets) there are potential safety issues related to the likelihood of birdstrike from e.g. open water created as part of mineral restoration. Conflicts with existing or planned infrastructure such as green infrastructure assets. Comment on the likely future status in the absence of the MLP: In the absence of the MLP there may be negative impacts, on material assets (and also safety concerns) as a result of un-regulated, un-mitigated or poorly planned development.
Population	Populations may potentially be affected by mineral workings and associated transportation. Communities can be very sensitive to increases in noise, traffic levels, odour, visual impacts and other negative impacts on amenity. Comment on the likely future status in the absence of the MLP: In the absence of the MLP and appropriate policies there may be negative impacts on populations and communities as a result of un-regulated, un-mitigated or poorly planned development.
Human Health	Minerals development can have various negative impacts. Noise from quarry working or associated traffic may disturb individuals sleep patterns – causing stress. There is a danger that existing inequalities in health between groups in a community may be exacerbated. It may be that those with resources and influence in a community can successfully object to what they regard as undesirable development. Poorer communities may not have the means or mobilisation. Those at particular risk of discrimination / disadvantage or are particularly vulnerable include, poorer communities (measured through a variety of indicators), black and minority ethnic people, people with disabilities, refugee groups, people seeking asylum, Gypsies and Travellers, single parent families; lesbian, gay, bisexual and transgender people; religious groups and carers. (Source: Gloucestershire NHS Primary Care Trust – August

SEA Topic (SEA Directive 2001/42/EC Annex 1 (f))	Potential effects of minerals and waste development & likely future environmental (or other) status in the absence of the Gloucestershire MLP
	2008). Comment on the likely future status in the absence of the MLP: In the absence of the MLP there may be negative impacts on human health as a result of un-regulated, un-mitigated or poorly planned development.
Cultural heritage including architectural & archaeological heritage	Minerals sites along with ancillary development such as road construction, soil bunds and screening, processing and storage areas can potentially damage or destroy artefacts / sites of cultural and archaeological heritage. Indirect effects may include: • A reduction in the legibility of archaeological landscapes as a result of the interruption of features extending beyond the extraction area. • Dewatering and potential disruption to drainage regimes may damage waterlogged archaeological deposits and destroy a sites palaeo-environmental potential. • Subsidence or ground settlement on upstanding monuments and historic buildings. • Dust from workings can have a detrimental impact on historic buildings and monuments – especially if the dust particles are chemically active. • In the long term the setting and character of a historic monument / archaeological landscape / listed building might be affected by extraction. Apart from visual aspects, there may be a detraction of amenity resulting from the disruption of rights of way and access and increased noise and heavy traffic. Comment on the likely future status in the absence of the MLP: In the absence of the MLP and appropriate policies there may be damage to Gloucestershire's cultural heritage (including architecture and archaeology) as a result of un-regulated, un-mitigated or poorly planned development.
Landscape	Landscapes may be damaged where a development changes the physical character of a particular area. Changes to, or the physical removal of landscape elements e.g. trees, slopes, hedges, field boundaries may change the character of the landscape and how it is experienced. Views may be damaged, both in terms of composition and extent. Potential landscape / visual effects as a result of quarrying / landraise / landfill development may include: • Natural topography being permanently damaged. • Geological exposures in old disused quarries may be lost if they are backfilled. • Loss of hedgerows and hedgerow trees.

SEA Topic (SEA Directive 2001/42/EC Annex 1 (f))	Potential effects of minerals and waste development & likely future environmental (or other) status in the absence of the Gloucestershire MLP
	• Rural character eroded as a result of operational areas, litter trapping fences, stockpiles and mounds, plant and buildings. • Insensitive restoration may weaken the local distinctiveness of a landscape. • On the positive side, mineral operations can create new landscape features such as lakes, ponds and wetlands. A good example being the Cotswold Water Park. <u>Comment on the likely future status in the absence of the MLP:</u> In the absence of the MLP and appropriate policies there may be damage to valued landscapes within Gloucestershire as a result of un-regulated, un-mitigated or poorly planned development.
The inter-relationship between the issues referred to above	There are numerous, complex inter-relationships between all the aspects of the natural and built environment and all the other social and economic factors that have been considered. <u>Comment on the likely future status in the absence of the MLP:</u> In the absence of the MLP and appropriate policies, development may cause unforeseen damage or produce knock-on negative impacts as a result of un-regulated, un-mitigated or poorly planned development.

Key Sustainability Issues

3.16 This section addresses the SEA Directive requirements in Annex I:

- (d) 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 designated pursuant to Directives 79/409/EEC (the Birds Directive) and 92/43/EEC (the Habitats Directive).

3.17 The following key sustainability issues for Gloucestershire were identified by GCC in the Scoping Report update (July 2013). In order to address the SA requirements as well as SEA, social and economic issues are identified as well as environmental issues. It is a general list and certain issues are likely to have greater significance to the development of minerals policy in Gloucestershire, such as: protecting Gloucestershire's environment whilst providing minerals; the high levels of traffic congestion and associated impacts which minerals development could potentially contribute to; minerals can only be worked where they are found and this is often in what is considered to be sensitive environments; the quality of mineral site restoration; and changes in landscape character.

Table 3.3: Key sustainability issues in Gloucestershire

No.	Sustainability Issues
1	**Relatively high house prices in the County** Gloucestershire is a relatively expensive place to live, with some districts and areas clearly much more expensive than others. Generally the high prices are in the rural areas,

No.	Sustainability Issues
	excluding the Forest of Dean and the more affluent and desirable locations in Cheltenham. This keeps the average high. The average price of a house in Gloucestershire in 2015 was £258,795 compared to the UK average of £196,999. Overall sold prices in the county during 2015 were 6% up on 2014 and 12% up on the 2010.
2	**Relatively low average income:** In 2015 the mean average income for residence in Gloucestershire was £25,617, over £1,500 lower than the average for England. There is also notable variability in average incomes within the county with a difference of over £7,200 per annum between district areas with the highest and lowest average incomes (ASHE/ONS 2016).
3	**High crime levels in some areas** The following are in the Top 10% nationally most deprived wards in terms of crime and disorder (2010): *Cheltenham* – All Saints 3, Hesters Way 1-4, Pitville 3&4, Spingbank 2, St M'rk's 1, St Pauls 2&3, St Pe'er's 1&4. *Gloucester* – Barnwood 3, Barton and Tredworth 1 2 5-7, Kingsholm and Wotton 3, Matson and Robinswood 2, Moreland 1 3 7, Podsmead 1, Westgate 1 3. *Stroud* – Central.
4	**Poor health in some areas / amongst certain groups** There are pockets of health related deprivation in Gloucester, Cheltenham and the Forest of Dean where life expectancy is lower than the rest of the county. All age, all cause mortality, early death rates from heart disease and stroke and from cancer are lower than the England rates and falling.
5	**High levels of traffic congestion and associated impacts** The busiest routes in the County with over 1000 HGVs in a 24 hour working day are, sections of the A40, A417, M50, M5, A46, A438, A435, A4311. There is a trend that the number of vehicle kms is increasing year on year in the County.
6	**The performance of the rural economy** Employment in more traditional agricultural industries is now under-represented in Gloucestershire compared to the UK average. However, in sharp contrast the leisure and tourism industry has grown and is economically significant in many rural parts of the county.
7	**Areas of deprivation and social exclusion** According to Government Indices of Deprivation there are significant pockets of deprivation in the County mainly in the urban areas of Gloucester and Cheltenham. The Indices of Deprivation are made up of 7 domains: Income; Employment; Health deprivation and disability; Education, Skills and Training deprivation; Barriers to Housing and Services; Crime and Living Environment. These are combined to give the Index of Multiple Deprivation. For Gloucestershire the ID2010 Super Output Areas in the national top 10% (i.e. in the worst 10%) are: *Cheltenham* – St Pauls 2, St Marks 1, Hesters Way 1. *Gloucester* – Podmead 1, Matson and Robinswood 1, Kingsholm and Wotton 3, Westgate 1&3.
8	**Potential for flooding** A very serious issue in Gloucestershire. High potential in some areas of the County as outlined in Gloucestershire's SFRA. The summer 2007 flood events resulted in 5,000 homes and businesses being flooded and many communities were cut off.
9	**Specific issues relating to mineral site restoration** There are issues over the general quality of mineral site restoration and also problematic

No.	Sustainability Issues
	issues in the Cotswold Water Park regarding wet restoration and 'bird strike' issues in relation to the proximity of RAF Fairford. There are a number of specific issues that need to considered in regards to the Cotswold Water Park – protection and enhancement of existing sites, consideration of the whole environment, the need for a more coherent approach to restoration and after use, ensuring that environmental priorities are considered for the lifetime of a quarrying operation, need for an ecosystems services approach to balance the differing/conflicting needs of biodiversity and people.
10	**Difficulties in terms of protecting Gloucestershire's environment whilst providing minerals needed by society** Minerals can only be worked where they are found and this is often in what is considered to be sensitive environments. In Gloucestershire the two principle limestone resource areas, the Forest of Dean and the Cotswolds are designated as Special Landscape Areas and AONB.
11	**Relatively low levels of renewable energy generation** Gloucestershire's renewable electricity and heat capacity has slowly increased over the years. In 2015 the Renewable Survey by RegenSW indicated the county's electricity capacity was 125 MW.
12	**The general state of Gloucestershire's biodiversity, the condition of SSSIs / sites protected under the Habitat's Directive / locally designated sites** Detailed information on the general state of biodiversity in Gloucestershire can be found in the latest Gloucestershire Biodiversity Framework and Delivery Plan at: http://gloucestershirebiodiversity.net/actionplan/index.php There are 10 International/European sites in and close to Gloucestershire. There are possible threats to them from minerals development although they are protected by law through the Habitat Regulations Assessment (HRA) process, which GCC is undertaking as part of the MLP preparation. The most recent condition of SSSI survey (Natural England, 1 August 2013) showed that 95.18% of the cou'ty's SSSIs were meeting t'e 'Public Service Agreem'nt' targets. Special consideration should be had to bat populations within the Wye Valley and Forest of Dean SAC. This area has 26% of the national population of the Lesser Horseshoe Bat and 6% of the Greater Horseshoe Bat.
13	**Decline in species biodiversi–y - in particular of certain bird species in Gloucestershire** *Biodiversity decline*: The priority species on the English list relevant to Gloucestershire are referenced on the Gloucestershire Biodiversity website at: http://gloucestershirebiodiversity.net/actionplan/priority-species.php *Bird populations:* Over a 40 year period in Gloucestershire there had been a decline in 22 species, 15 species increased in number, 3 species were lost and there were 2 new species. Source: Gloucestershire Environment Partnership. State of the Natural Environment Report 2011.
14	**Increases in serious pollution incidents** No figures specifically relating to Gloucestershire but (at least) 1 serous incident in September 2006 = Chemical fire in Andoversford area in Cheltenham. January 2004 = Explosion at Lithium battery factory in Tewkesbury. November 2000 = serious fire at CSG

No.	Sustainability Issues
	waste transfer station in Sandhurst Lane Gloucester.
15	**Water quality and quantity** Gloucestershire falls within the Severn Vale and Upper Thames catchments. The water quality within the County overall is not yet meeti`g 'g'od' ecological status in regards the Water Framework Directive. However, there is great variation across the two catchments. Whilst only 7% of rivers and lakes within the Severn Vale catchment have good ecological and chemical status, 65% of water bodies in Upper Thames catchment are reported to be at good or moderate ecological status.
16	**Potential for damage to the historic environment** Scheduled Ancient Monuments in Gloucestershire = 602. Conservation Areas = 287 covering 6233 ha. Number of listed buildings = 13,432. Other archaeological sites structures and buildings = 24,962
17	**Detrimental changes in landscape character** There are three Areas of Outstanding Natural Beauty (AONB) in the County and other important areas many of which are outlined in the Gloucestershire Landscape Character Assessment available at: www.gloucestershire.gov.uk/extra/article/109519/Landscape-Character-Assessments There is the potential for minerals development to contribute to detrimental changes in landscape character in the County and plans should endeavour to minimise impacts as much as possible. The Gloucestershire Nature Map also identifies four Natural Areas in which the following Strategic Nature Areas (SNA) have been identified: Woodland, Unimproved Limestone Grassland, Unimproved Neutral Grassland, Lowland Wet Grassland and Heathland/Acid Grassland. Climate change represents a major threat to landscape character in the County e.g. with beech woods under particular threat from rising temperatures. More on the Gloucestershire Nature Map at: http://www.gloucestershirebiodiversity.net/actionplan/nature-map.php

4 Sustainability Appraisal framework and assumptions

Sustainability Appraisal Framework

- This section addresses the SEA Directive requirements in Annex I(e) the environmental protection objectives, established at international, Community or Member State 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.

4.1 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. Once SA Objectives are developed they provide the basis for testing strategy and policy formulation of relevant aspects of the MWDF. The objectives derived from this process are the basis for identifying appropriate indicators and targets against which the success of adopted strategies and policies may be judged.

4.2 The SA Framework contains a number of objectives and has been developed by GCC Minerals and Waste Planning Policy officers. The original SA Framework Objectives have changed and evolved with the MWDF. There are several reasons for this:

a. SA is an iterative and evolving process. The Framework can be regularly updated, particularly in terms of presenting up-to-date baseline data.

b. The SA process is a consultative one, both in terms of the MWDF documents and the SA Reports. The GCC Minerals and Waste Planning Policy team have made every effort to take on board the comments of stakeholders and to make appropriate changes.

c. Government guidance and planning legislation is constantly changing and being updated and the SA process has to reflect this.

4.3 The policies and sites included in the MLP Consultation Draft (September 2016) have been appraised against the SA Objectives, which are included in **Table 4.1** below. Each objective has a number of subsidiary questions, which provide criteria when conducting assessment.

Table4.1: Sustainability Appraisal Objectives

Sustainability Appraisal Objectives and Subsidiary Questions
Social
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. - What are the potential health impacts on communities? - What are the potential health impacts on the employees at the site or facility?
2. To safeguard the amenity of local communities from the adverse impacts of mineral development. - What are the impacts in terms of noise and vibration? - To what extent are there potential landuse conflict issues? - Are there any cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential?

Sustainability Appraisal Objectives and Subsidiary Questions
Economic
3. 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?
4. 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?
5. To ensure that mineral 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 or potential restoration of attract large numbers of birds?
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.
Environmental
7. 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 irreplaceable habitats (e.g. Ancient Woodlands), local sites, protected species and habitats and species of principle importance for biodiversity?* - *What potential is there for achieving biodiversity targets and net gains in habitats/biodiversity?*
8. 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?
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible. - *Can the existing landscape be enhanced?* - *What restoration issues are there?* - *What potential is there to establish coherent, resilient ecological networks?* - *Would the restored sites contribute to the Biodiversity 2020 targets?*
10. 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? - Will the development contribute to providing traditional building materials?

Sustainability Appraisal Objectives and Subsidiary Questions
11. To protect conserve and enhance geo-diversity in Gloucestershire. - What if any are the likely impacts on geo-diversity? - Will it enhance geo-diversity?
12. 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? - What are the impacts upon the wider historic landscape?
13. To prevent flooding, in particular preventing inappropriate development in the floodplain. - *Can the risk of flooding be managed and reduced through site design?* - *Will surface water runoff be sustainably managed?* - *Is there the potential to protect and promote areas for future flood alleviation schemes?*
14. To protect and enhance soil / land quality in Gloucestershire. - What is the landtake? - Would it improve the soil quality?
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality. - *What is the proximity of sensitive receptors and to what extent can air emissions, including dust be controlled?*
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply. - *What is the proximity of vulnerable surface or groundwater and what are the likely impacts on these features?* - *What are the impacts on water consumption?*
17. 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 - What is the capacity of the site and transport infrastructure to support the sustainable movement of minerals and products arising from resource recovery?
18. To reduce contributions to and to adapt to Climate Change. - 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.

Assumptions taken into account during the SA

4.4 SA inevitably relies on an element of subjective judgement. In predicting and assessing the likely sustainability effects of the MLP, GCC's analysis of the characteristics of Gloucestershire and the sustainability issues it faces has been drawn on as well as mapped spatial data (e.g. showing extent of nature conservation designations etc.) and the professional experience of the SA team.

4.5 In making SA judgements for the appraisal of mineral site allocations and policies included in the MLP Consultation Draft (September 2016) the SA team has also used the data collated and the assessments produced by GCC for each site (see GCC (2016) Evidence Paper to Support the Draft Minerals Local Plan for Gloucestershire Consultation), along with the technical assessments undertaken on behalf of GCC by Atkins on hydrogeology and landscape and the Council's own Habitats Regulations Assessment.

4.6 To support the appraisal of mineral site options and subsequent allocations a series of decision-making criteria for each SA headline objective was developed (this can be seen in **Table 4.2**) with the purpose of providing a consistent approach to the prediction and assessment of effects. The decision-making criteria relates specifically to the assessment of the potential sites being considered at this stage for allocation in the MLP, and set out assumptions and justifications for the level of significance of the potential effects that mineral sites developed at those sites may have. These assumptions were developed so that, where possible, quantitative data could be used to appraise the sites. Note that the assumptions and justifications included in Table 4.2 were originally developed prior to the publication of the National Planning Policy Guidance (March 2014) and have therefore been informed by some planning policy statements, and planning practice guidance that has been superseded by the National Planning Practice Guidance. Where referenced, former planning policy statements and planning practice guidance are still judged to be relevant as the specific information they contained has not been included in the NPPG. Some of the assumptions have been updated to reflect the hydrogeology and landscape technical assessment reports that were not available previously (see SA objectives 8, 13 and 16).

4.7 It should be noted that distances from specific assets (e.g. biodiversity, heritage, recreational) used within relevant SA Objectives to predict the magnitude of potential effects of allocating the sites are for a guide only and do not mean that mineral sites within a certain distance would definitely have an effect in every instance. The potential effect depends significantly on the type and design of mineral sites eventually developed on the site, which will need to be assessed if prescribed within policies of the Minerals Local Plan or at the planning application stage.

Table 4.2: SA Framework and Assumptions for the Gloucestershire Minerals Local Plan

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
Social			
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. - *What are the potential health impacts on communities?* - *What are the potential health impacts on the employees at the site or facility?*		Some minerals sites could have a minor negative effect on protecting the health of local residents, communities and visitors to the County. The risk of dust[13] from blasting/ drilling and other sources within the site (e.g. haul roads, crushers, stockpiles etc.) could affect residents and communities near to mineral extraction sites. However, research undertaken for the government in 1995[14] concluded that dust generated by surface mineral operations (i.e. sand and gravel extraction and crushed rock quarries, as opposed to underground mines) did not result in any specific public health impacts. Therefore, it is not considered likely that mineral extraction in Gloucestershire would give rise to a significant negative effect on health, but minor negative effects due to nuisance effects of dust may be experienced or perceived by some residents etc. living or working close to sites. Both the Technical Guidance to the NPPF[15] and former Annex I: Dust of Minerals Policy Statement 2, state that residents can be affected by dust up to 1km from the source, and that additional measures to control PM_{10} might be necessary if, within a site, the actual source of emission is within 1km of any residential property or other sensitive use. However, former Annex I of Minerals Policy Statement 2 also stated that concerns about dust are most likely to be experienced near to dust sources, generally within 100m depending on site characteristics and in the absence of appropriate mitigation. The NPPF is clear that minerals planning authorities should ensure that unavoidable dust emissions are controlled and mitigated or removed at source. Therefore it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential health effects.	Visual analysis of Ordnance Survey (OS) base maps for residential areas, schools, hospitals and faith centres and information from Gloucestershire County Council's (GCC) own site assessments.
	++	N/A	
	+	N/A	
	0	Potential minerals sites which are: • Over 100m from sensitive receptors (i.e. residential areas, schools, hospitals, faith centres (e.g. churches, mosques, temples)	

[12] From: Gloucestershire County Council. Gloucestershire Minerals Local Plan: Sustainability Appraisal – Scoping Report Update 4, July 2013.

[13] Dust is the generic term which BS6069 (Part 2) *Characterization of air quality Glossary* (1987) uses to describe particulate matter in the size range 1–75 µm (micrometres) in diameter. Particles that are less than or equal to (≤) 10 µm in diameter are commonly referred as PM_{10}.

[14] Office of the Deputy Prime Minister (by Arup Environmental/Ove Arup and Partners). The Environmental Effects of Dust from Surface Minerals Workings, 1995.

[15] DCLG. Technical Guidance to the National Planning Policy Framework, March 2012.

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		are expected to have no or negligible effects on health.	
	-?	Potential minerals sites which are: • Within 100m of sensitive receptors (i.e. residential areas, schools, hospitals, faith centres (e.g. churches, mosques, temples) could have minor negative effects on health due to the potential for dust (PM10) to have a negative effect on the health of local residents, communities and visitors to the County. Although this impact is dependent on local circumstances (such as the topography, the nature of the landscape, the respective location of the site and the nearest residential property or other sensitive use in relation to the prevailing wind direction and visibility), therefore in all cases these effects are uncertain (-?).	
	--	N/A, as government research has excluded any health effects of dust generated by surface minerals operations such as sand and gravel and crushed rock extraction.	
2. To safeguard the amenity of local communities from the adverse impacts of mineral development. - *What are the impacts in terms of noise and vibration?* - *To what extent are there potential landuse conflict issues?* - *Are there any cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential?*	Mineral sites could have a minor negative effect on safeguarding the amenity of local residents and communities. This is because all minerals development would result in some level of noise, vibration and light pollution during site preparation, operation and restoration and associated with transport of minerals from the site. Noise and vibration from blasting/drilling and other sources within the site (e.g. haul roads, crushers, stockpiles etc.) may cause concern to residents and communities near to mineral extraction sites. Former Annex 2: Noise of Minerals Policy Statement 2 (which was superseded by the NPPF) stated that noise from surface mineral operations can have a noticeable environmental impact and is a common cause of complaint. However, research for the former Department for the Environment, Transport and the Regions (DETR) found that practice on the assessment and control of noise at surface mineral workings had improved since the publication of the earlier Minerals Planning Guidance 11 in 1993. The extent of noise and vibration effects on local amenity will depend on the type of mineral extracted on the site, the scale of the operations and the type of activities undertaken within the site. For example, noise and vibration may be greater near hard rock sites (e.g. crushed rock) due to the need for blasting prior to excavation, which is rarely needed at sand and gravel or clay operations. Additionally, potential negative effects may occur in relation to amenity if residential areas are between 100m and 1km from a potential minerals site as dust could have a nuisance effect, as highlighted under Objective 1 above. The NPPF is clear that minerals planning authorities should ensure that unavoidable noise, dust and particle emissions and any blasting vibrations are controlled and mitigated or removed at source, but when developing noise limits, there should be recognition that some noisy short-term activities, which may otherwise be regarded as unacceptable, are unavoidable to facilitate minerals extraction.		As for SA Objective 1 - visual analysis of OS base maps for residential areas, schools, hospitals and faith centres and information from GCC site assessments. Visual analysis of relevant Local Plan maps for areas planned for future residential development, however, the certainty of these development locations depends on the status of the Local Plan in question, i.e. how close to Adoption it is (the date and stage of each Local Plan has been

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		Therefore it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. There could be potential for landuse conflict where minerals sites are in close proximity to areas planned for future residential development. The NPPF states that local planning authorities should take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality.	referred to in the SA matrices). GIS analysis of number of existing and potential mineral sites within 1km of existing settlement boundaries.
	++	N/A	
	+	N/A	
	0	Potential minerals sites which are: • Over 100m from sensitive receptors (i.e. residential areas, schools, hospitals, faith centres (e.g. churches, mosques, temples) including areas identified or allocated for residential development in Local Plans. are expected to have no or negligible effects on local amenity. Potential sites which are greater than 100m from an existing mineral site are not expected to have a cumulative effect on the local community. Potential mineral sites which are adjacent to or within 100m of an existing mineral site, but over 100m from sensitive receptors are not expected to have a cumulative effect on the local community. Settlements with no new potential minerals sites within 1km are not expected to experience cumulative effects from new mineral operations on the amenity of the local community.	
	-	Potential minerals sites which are: • Within 100m of sensitive receptors (i.e. residential areas, schools, hospitals, faith centres (e.g. churches, mosques, temples) including areas identified or allocated for residential development in Local Plans. could have a minor negative impact on amenity, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.	

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		In addition, potential sites which are: • Within 1km from a settlement, and • There are other existing mineral sites also within 1km of the same settlement could have a cumulative effect on the amenity of the local community.	
	--	N/A, as research has highlighted that effects on amenity (e.g. noise) are improving and can be controlled, mitigated or removed.	
Economic			
3. 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?*	The location of mineral sites is unlikely to affect the promotion of sustainable economic development in Gloucestershire, as it is unlikely that new sites will encourage further investment and growth in the industry.		No data needed.
	++	N/A	
	+	N/A	
	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.	
	-	N/A	
	--	N/A	
4. 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 a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, as they are likely to result in a small amount of job creation for local people in both rural and urban areas. However, job creation is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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. Future employees of potential mineral sites are unlikely to use sustainable transport to travel to work due to the predominant rural location of most mineral sites.		No data needed.
	++	N/A	
	+	All sites are expected to have a minor positive effect on increasing employment levels.	
	0	N/A	
	-	N/A	
	--	N/A	
5. To ensure that mineral sites do not compromise the safety of commercial or	Mineral extraction sites that are restored to open water can increase bird-strike risk if they are planned near commercial or military aerodromes. This is because where birds congregate in large numbers, they can provide a hazard to aircraft at locations close to aerodromes or low flying areas.		Aerodrome safeguarding areas are provided in GCC site assessments

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
military aerodromes. - *Is the site close to an aerodrome or low flying area?* - *Will the site or potential restoration of attract large numbers of birds?*	The numbers and movements of some species of birds may be influenced by the distribution of mineral sites. 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 that plan to incorporate open water restoration. The NPPF states that aviation safety should be taken into account when restoring minerals sites. The type of restoration of potential mineral sites is not known at this stage, and would need to be considered once specific proposals are made.		(relating to Gloucestershire Airport and MOD Airports).
	++	N/A	
	+	N/A	
	0	Potential minerals sites that are not within an aerodrome safeguarding area are not expected to have an effect on this objective.	
	-?	Potential minerals sites that are: • Within an aerodrome safeguarding area could have minor negative effects on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft. A ? will be used to denote uncertainty about this effect as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.	
	--	N/A	
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.		No data needed.
	++	N/A	
	+	N/A	
	0	No effect is likely as new potential mineral sites would not be classed as inappropriate development and would therefore have no effect on this objective	
	-	N/A	
	--	N/A	

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
Environmental			
7. 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 irreplaceable habitats (e.g. Ancient Woodlands), local sites, protected species and habitats and species of principle importance for biodiversity?* - *What potential is there for achieving biodiversity targets and net gains in habitats/biodiversity?*		International and national sites have statutory protection through international and EU conventions (Ramsar, 1971; Bern, 1979; Bonn, 1979), directives (92/43/EC; 2009/147/EC) and national law (Wildlife and Countryside Act, 1981 as amended) and should be conserved and enhanced as outlined in the NPPF. Locally important sites of nature conservation should also be protected under the NPPF, 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 11. The design of and restoration of mineral sites is increasingly adopting innovative practice to contribute to and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible. There may be opportunities for sites to contribute towards national and local biodiversity targets during the restoration stage of the site, supporting ecological networks surrounding the site and incorporating the use of native species and habitats to encourage biodiversity within the site. However, this would be very dependent on the exact nature and proposed design of the planned mineral site, which would not be known until the planning application stage. It is important to bear in mind that looking in greater detail at the effects of current and completed minerals development in the same general location of potential new minerals sites can sometimes provide greater certainty than from the SA process. This can mean that biodiversity concerns flagged up by the SA methodology may not in reality be adverse but actually provide important opportunities for beneficial outcomes (e.g. because sites are near to valued biodiversity and have the potential to enhance it). Therefore, low SA scores (e.g. significant or minor negative) for this objective highlight that a cautious approach should be taken to permitting minerals development rather than ruling it out completely. Initially SA scores were based on analysis of spatial biodiversity data and proximity of the potential	GIS national datasets from Natural England's MAGIC database, plus GCC data showing Local Wildlife Sites, and information from the Council's own site assessments. There is no GIS data available for Priority Species and Habitats, however, the Council's site assessments by a GCC Ecologist have considered the proximity to or inclusion within the site of records of a legally protected species; known presence of a habitat or species on the English List* or with Strategic Nature Areas (SNAs) within the Gloucestershire Nature Map (version 1.1 Dec 2011)[17]. GCC's Habitats Regulations Assessment Report (June 2016).

[17] http://gloucestershirebiodiversity.net/actionplan/nature-map.php

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		mineral site to designated nature conservation sites. However, where relevant, these scores were reviewed to reflect information and interpretation from the GCC Ecologist in 2014 regarding whether impacts are actually likely to occur on those designated nature conservation sites. This information and interpretation draws on the GCC Ecologist's local knowledge of the sites and the consideration of potential pathways/corridors between any designated sites and the minerals site, and consideration as to the potential impact of any minerals development at that site. This information is detailed in relevant site SA matrices. Finally, the Council's 2016 Habitats Regulations Assessment Report[16] has been reviewed to understand the likelihood of significant effects on SACs, SPAs and Ramsar sites.	
	++	N/A – unless significant biodiversity enhancement opportunities existed through restoration of the minerals extraction site, it is not considered likely that significant positive effects would occur form minerals development at any of the sites.	
	+?	Potential minerals sites for which: • The GCC assessment considers the overall impact on biodiversity is potentially uncertain/positive or neutral/positive, generally because there is unlikely to be any priority habitats or species affected, but good biodiversity enhancement opportunities exist through restoration of the site could have a minor positive effect on this objective, however these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.	
	0	Potential minerals sites for which: • The GCC assessment considers the overall impact on biodiversity is either "potentially negative, positive or uncertain", usually because there are unlikely to be any priority habitats or species affected, and not significant enhancement opportunities; and/or • The GCC Habitats Regulations Assessment concludes no significant effects are likely on European designated nature conservation sites (Special Protection Areas, Special Areas of Conservation) and Ramsar sites are not expected to affect this objective.	
	-/+	For some sites, mixed positive and negative scores are identified, as while there may be some impacts on biodiversity during extraction at the site, there may also be opportunities for habitat creation and enhancement during restoration of the sites.	
	-?	Potential minerals sites for which:	

[16] HRA Main Report for Gloucestershire MLP (Vers. 1.2 at Pre-Publication Stage), Gloucestershire County Council, 2016.

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		• The GCC assessment considers the overall impact on biodiversity is potentially negative or uncertain on nationally designated sites up to 1km distant, or the GCC assessment considers the site poses a risk to the water environment of any designated aquifer fed/surface water/ flood water dependent site over 1km distant could have a minor negative effect on this objective, however these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.	
	--?	Potential minerals sites for which: • The GCC assessment considers the overall impact on biodiversity is potentially negative or uncertain on internationally designated sites up to 1km distant, or • The GCC assessment considers the site poses a risk to the water environment of any designated aquifer fed/surface water/ flood water dependent site over 1km distant, or • The GCC Habitats Regulations Assessment concludes significant effects are likely could have significant negative effects on this objective, however these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.	
8. 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?*	Areas of Outstanding Natural Beauty (AONB) have statutory protection through the Countryside and Rights of Way Act (2000). Over half of Gloucestershire has Area of Outstanding Natural Beauty (AONB) status. This comprises a substantial part of the Cotswolds to the east of the County, and also parts of the Wye Valley and the Malvern Hills AONBs. Areas of high landscape quality and the setting of settlements may be affected by the development of minerals sites. In addition, areas with poor landscape character could be enhanced through the creation of high quality restored minerals sites. However, this will not be able to be determined until the planning application stage, and will depend upon factors such as: how prominent sites are in the landscape; the level of screening; and the character of the surrounding landscape. Reference has been made in the GCC site assessments to relevant Landscape Character Areas each site is within, as well as a description in the General Comments section of the potential landscape and visual impacts for each site and whether or not mitigation could be achieved. GCC commissioned landscape assessments for each of the proposed site allocations in the Pre-publication draft of the Minerals Local Plan (September 2016). Reports have been produced by Atkins for each of the allocated sites (dated June 2015), which assess the potential for landscape and		GIS national datasets from Natural England's MAGIC database, plus GCC data showing landscape character areas, information from the Council's own site assessments, in particular the Atkins Landscape Assessment Reports for each site (June 2015).

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		visual impacts of minerals extraction. The conclusions regarding landscape impacts from the Atkins reports have been used to inform the judgement of sustainability effects for this SA objective. Where the Atkins reports highlight visual impacts for particular nearby properties, this has been referred to, but has not influenced the overall score for this SA objective as it relates more to impacts on the wider landscape.	
	++	N/A	
	+?	The restoration of minerals sites 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 restoration of the minerals site, which would not be known until the planning application stage and is recorded for SA Objective 9 below, rather than this objective.	
	0	Potential minerals sites which: • Are judged as having 'negligible' or 'minor/negligible' landscape impacts in the Atkins Landscape Report are considered unlikely to have an effect on the landscape.	
	-?	Potential minerals sites which: • Are judged as having 'minor' or 'moderate/minor' landscape impacts in the Atkins Landscape Report could have a minor negative effect on the landscape. These effects would be uncertain as a more detailed assessment would be required once specific proposals and mitigation measures are known.	
	--?	Potential minerals sites which: • Are judged as having 'major', 'major/moderate' or 'moderate' landscape impacts in the Atkins Landscape Report could have a significant negative effect on the landscape. This effect would be uncertain as a more detailed assessment would be required once specific proposals and mitigation measures are known.	
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green		The NPPF requires that high quality restoration and aftercare of minerals sites takes place. The restoration of minerals sites is increasingly adopting innovative practice which has the potential to have positive effects on landscape character, biodiversity, amenity and recreation. Restoration, for example, can contribute to and enhance the natural and local environment by minimising impacts on biodiversity, supporting the delivering of green infrastructure and providing net gains in biodiversity where possible. Green infrastructure is defined by Natural England as a network of multi-functional	No data needed.

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
infrastructure where possible. - *Can the existing landscape be enhanced?* - *What restoration issues are there?* - *What potential is there to establish coherent, resilient ecological networks?* - *Would the restored sites contribute to the Biodiversity 2020 targets?*	green space, both urban and rural, which supports economic growth and regeneration, delivers a wide range of quality of life benefits, supports natural systems and biodiversity and help reduces the negative impacts of climate change. There may also be opportunities for sites to contribute towards national and local biodiversity targets. Some sites are now also adopting landscape-scale approaches to restoration, which is supported by the NPPF. However, the standard and extent of restoration would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.		
	++	N/A	
	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.	
	0	N/A	
	-	N/A	
	--	N/A	
10. 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?* - *Will the development contribute to providing*	All of the potential minerals sites could have negative effects on access to and the enjoyment of recreational facilities if they are in close proximity to the potential site, by making the recreational/cultural facilities less attractive for users or in some cases removing the access (e.g. Public Rights of Way (PRoW) and cycle routes). The potential negative effects would arise because all minerals development would result in some level of noise, traffic, and light pollution during site preparation, operations and potentially during restoration as well. There may be some opportunities for enhancement to footpaths/ PRoW through development of particular sites. Protection and conservation of heritage assets is covered under SA Objective 12 below. Aggregate sites are not likely to contribute to providing traditional building materials. Traditional stone as a building material is usually produced from building stone sites which are not being		GIS data from GCC for PRoW), plus analysis of OS base map for other types of leisure/recreational facilities and open spaces and information from GCC's site assessments (relating to PRoWs). Analysis of Sustrans Maps[18] will be completed for cycle routes.

[18] Available at: http://www.sustrans.org.uk/ncn/map?gclid=CIWvqcnx47kCFTIQtAodzCMACQ

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
traditional building materials?	considered in the scope of the potential sites for the Gloucestershire Minerals Local Plan.		
	++	Potential minerals 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 minerals 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 minor positive effect on recreational assets in the County.	
	0	Potential minerals 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 minerals 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 potential diversion required. could have a minor negative effect on recreation activities and assets in the County by making the facilities less attractive for users.	
	--	Potential minerals 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 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 or temporarily closing land which has potential for recreation/access to the countryside.	
11. To protect conserve and enhance geo-diversity in Gloucestershire. - *What if any are the likely impacts on geo-diversity?*	National and locally important sites of geological/geomorphological interest (SSSIs or Local Geological Sites, formally RIGS) should also be protected under the NPPF. The NPPF states that proposals for any development on or affecting geodiversity sites or landscape areas will be judged. The NPPF also states that to minimise impacts on geodiversity, planning policies should aim to prevent harm to geological interests; and local planning authorities should put in place policies so that high quality restoration and aftercare of mineral sites take place, including for geodiversity.		GIS data from GCC relating to RIGS/LGSs, and information from GCC's site assessments, which are based on information provided by

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
- Will it enhance geo-diversity?	Mineral sites can potentially contribute to geodiversity by preserving and conserving geological features/landscapes that contribute towards the link between people, landscape and their culture. However, due to the methods of extraction and processing, this is more likely at less intensive sites (e.g. building stone) than aggregate sites.		the Gloucestershire Geology Trust at the Geological Records Centre.
	++	N/A	
	+?	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.	
	0	Potential minerals sites which are: • More than 500m from a national site of geological interest (SSSI) or Local Geological Site are not expected to affect this objective.	
	-?	Potential minerals sites which are: • Within 500m of a national site of geological interest (SSSI) or Local Geological Site could have a minor negative effect on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.	
	--?	Potential minerals sites which are: • Within the boundary of a national site of geological interest (SSSI) or Local Geological Site could have significant negative effects on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.	
12. To protect conserve and enhance the historic environment, heritage assets and their setting. - *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. The NPPF requires local authorities to conserve and enhance the historic environment and states that when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The development of minerals sites in proximity to heritage assets could have a negative effect on the		GIS national datasets from Natural England's MAGIC database, plus GCC data showing landscape character areas, and information from GCC's site assessments, which are based on information provided by GCC's

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
- *What are the impacts upon the wider historic landscape?*		setting of these assets. Reference has been made in the GCC site assessments to the relevant Historic Landscape Characterisation status for each site, as well as a description of the proximity to nearby heritage assets and whether or not mitigation would need to be provided. GCC commissioned landscape assessments for each of the proposed site allocations in the Pre-publication draft of the Minerals Local Plan (September 2016). Reports have been produced by Atkins for each of the allocated sites (dated June 2015), which assess the potential for landscape and visual impacts of minerals extraction, including impacts on Historic Landscape Character and local heritage features. The conclusions regarding severity of the impacts on HLC and local heritage features from the Atkins reports have also been used to inform the judgement of sustainability effects for this SA objective.	Archaeology team.
	++	N/A	
	+	N/A	
	0	Potential minerals sites which are: • Within or adjacent to industrial estates • More than 1km from a Historic Park or Garden or Registered Battlefield • More than 1km from a Scheduled Ancient Monument or Listed Building, or • More than 1km from a Conservation Area are considered to have no effect on these assets.	
	-?	Potential minerals sites which are: • Within 1km of a Historic Park or Garden or Registered Battlefield • Within 1km of a Scheduled Ancient Monument or Listed Building, or • Within 1km of a Conservation Area could have a minor negative effect on these assets. In addition, where the GCC site assessment notes some potential for impacts on historic environment there could also be a minor negative effect. These effects would be uncertain as a more detailed assessment would be required once proposals are known.	
	--?	Potential minerals sites which: • Are within or adjacent to a Historic Park or Garden or Registered Battlefield • Have Listed Buildings or Scheduled Ancient Monuments present on site, or • Are located within or adjacent to a Conservation Area could have a significant negative effect on these assets. In addition, where the GCC site assessment notes significant potential for impacts on	

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		historic environment there could also be a significant negative effect. These effects would be uncertain as a more detailed assessment would be required once proposals are known.	
13. To prevent flooding, in particular preventing inappropriate development in the floodplain. - *Can the risk of flooding be managed and reduced through site design?* - *Will surface water runoff be sustainably managed?* - *Is there the potential to protect and promote areas for future flood alleviation schemes?*	Paragraphs 100-105 of the NPPF describe how Local Authorities should apply a sequential, risk based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk by: applying the Sequential Test; if necessary, applying the Exception Test; and using opportunities offered by new development to reduce the causes and impact of flooding. As stated in the technical guidance to the NPPF[19], 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. Table 2 of the technical guidance to the NPPF outlines the flood risk vulnerability classification. Minerals working and processing (except sand & gravel working) are classed as less vulnerable, which means that they are potentially compatible with all flood zones except for Flood Zone 3b, the functional floodplain[20]. Sand and gravel workings are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. Some sites, which may dewater, may hold the potential to store excess water in times of heavy rain, which would be seen as a positive in terms of preventing flood risk. However, this would not be known until the planning application stage. GCC commissioned hydrogeological assessments for each of the proposed site allocations in the Pre-publication draft of the Minerals Local Plan (September 2016). Report have been produced by Atkins for each of the allocated sites (dated March 2016), which assess whether quarrying of crushed rock or sand and gravel at the allocated site is likely to have a significant impact on flood risk, water quality or changes in water quantity. Therefore, the conclusions of the Atkins reports have been used to inform the judgement of sustainability effects for this SA objective on flood risk, as well SA objective 16 below. However, the Atkins reports state that the conclusions reached are "possible effects that could occur in the absence of appropriate mitigation. It is expected that applicants will complete detailed assessment and develop appropriate mitigation measures. It is likely therefore that the impacts of any particular scheme would not approach those detailed." Although the Atkins reports conclude that there could be significant flood risk impacts from mineral extraction for many of		GIS data from GCC and the Environment Agency, and GCC's site assessment (relating to flood risk).

[19] DCLG (March, 2012). Technical Guidance to the National Planning Policy Framework.
[20] Table 3 of the technical guidance to the NPPF.

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		the potential sites, there is an explanation of the measures that would be included to reduce flood risk, and a conclusion is reached regarding residual effects which are generally negligible for most of the sites. Therefore, it is assumed that the potential significant effects identified in the Atkins reports are very unlikely to occur, and only minor negative effects on flood risk have been identified, with uncertainty attached as they will depend on the detailed proposal for the site and any mitigation measures included, which would be assessed at the planning application stage.	
	++	N/A	
	+	N/A	
	0	• Sites where the Atkins hydrogeological report concludes an insignificant impact on flood risk are not expected to have an effect on flood risk.	
	-?	• Sites where the Atkins hydrogeological report concludes there is potential for a significant risk of flooding could have a minor negative effect on flood-risk, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible.	
	--	N/A	
14. To protect and enhance soil / land quality in Gloucestershire. - *What is the landtake?* - *Would it improve the soil quality?*		The NPPF states that where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land (4 and 5) in preference to that of a higher quality (1, 2 and 3). Furthermore, the NPPF states that local planning authorities should put in place policies to ensure that high quality restoration and aftercare of mineral sites takes place, including for agriculture (safeguarding the long term potential of best and most versatile agricultural land and conserving soil resources). Therefore, there may be opportunities to redress the loss of agricultural land. This is uncertain however, as it will depend on the specific restoration proposals put forward which will not be known until the planning application stage.	GIS national datasets from Natural England's MAGIC database and GCC's site assessment.
	++	N/A	
	+	N/A	
	0	Potential minerals sites which are: • Not within grade 1, 2 or 3 agricultural land are not expected to have an effect on protecting or enhancing soil/land quality.	
	-?	Potential minerals sites which are: • Large (i.e. over 20 ha) and partially within grade 1, 2 or within grade 3 BMV agricultural land; or • Small to medium (i.e. less than 20 ha) and entirely within grade 1, 2 or within grade	

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		3 BMV agricultural land could have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration.	
	--?	Potential sites which are: • Large (i.e. over 20 ha) and located entirely within grade 1 or 2 BMV agricultural land could have a significant negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration.	
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality. - *What is the proximity of sensitive receptors and to what extent can air emissions, including dust be controlled?*	Proposals for all types of minerals sites could contribute to increasing air pollution in the County with regards to minerals transportation by road, as well as any air pollution associated with the operation of the sites and processes used such as dust from blasting and crushing. The type and extent of air pollution (e.g. from dust or other emissions) will depend on the type of mineral extracted on the site, the scale of the operations and the type of activities undertaken within the site. For example intensive handling of hard rocks such as crushed rock (e.g. limestone and crystalline rocks) may produce large amounts of dust due to drilling and blasting. Although softer minerals, such as sand and gravel, can crumble more easily during handling and may produce a greater number of dust particles. Furthermore, the effects of traffic related pollutants (e.g. Nitrogen Dioxide, Carbon Dioxide and Particulate Matter) may differ depending on the mineral worked at sites and the level of output. For example, crushed rock quarries typically have larger annual outputs than sand and gravel sites and may therefore involve more traffic movements within and outside of the sites. For certain quarry processes, dust emissions are controlled under the Environmental Permitting (England and Wales) Regulations (2010) regulated and enforced by the Environment Agency. The requirement to meet EP permitting standards (including emissions to air) should ensure that the design and operation of minerals sites minimises any potentially significant effects on human health and the environment. In addition, many sites 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 sub-question relating to air quality impacts on sensitive receptors due to dust emissions from the sites themselves are already covered under the assumptions for SA Objective 1 above. The		Analysis of OS data, plus Defra's list of AQMA locations[22] and the GCC's site assessments relating to highways.

[22] http://aqma.defra.gov.uk/maps.php.

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		assumptions discussed below for potential effects on this objective therefore relate to air emissions from road transport of mineral only and consider the proximity of sites 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 minerals will lead to increases in local air pollution and emissions of CO2. The further vehicles transporting minerals 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 mineral site 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 Gloucestershire Joint Technical Evidence Paper 1: Transport[21] states that transport is a major issue when considering proposals for mineral development, as the generation of significant amounts of road traffic can and does have negative impacts on the amenity of the local community and the environment. The potential of each site to reduce the distance minerals travel by road (through the use of more sustainable transport modes) is covered under SA Objective 17 below.	
	++	N/A	
	+	N/A	
	0	Potential minerals sites which are: • Within 1km of the strategic highway network <u>but</u> not within 1km of an AQMA are expected to have a negligible impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.	
	-	Potential minerals sites which are: • Within 1km of an Air Quality Management Area (AQMA); and/or • More than 1km from the strategic highway network (and therefore travelling further along local roads) are expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed,	

[21] The Gloucestershire Minerals and Waste Core Strategies Joint Technical Evidence Paper 1: Transport (Living Draft – January 2008)

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
		which would be assessed at the planning application stage.	
	--	N/A	
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply. - *What is the proximity of vulnerable surface or groundwater and what are the likely impacts on these features?* - *What are the impacts on water consumption?*		The Water Framework Directive[23] applies to all surface freshwater bodies (including lakes, streams and rivers), groundwater, 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 minerals site will affect ground and surface water on a potential site depends on the type of mineral worked, site design and characteristics, and the geological conditions. Mineral sites that are in Source Protection Zone (SPZ) 1 or adjacent to a water body could potentially lead to loss of contaminants or accidental pollution incidents. However, the NPPF states that local planning authorities should set out environmental criteria against which planning applications will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural environment, including from impacts on the flow and quantity of surface and groundwater and migration of contamination from sites. GCC commissioned hydrogeological assessments for each of the proposed site allocations in the Pre-publication draft of the Minerals Local Plan (September 2016). Reports have been produced by Atkins for each of the allocated sites (dated March 2016), which assess whether quarrying of crushed rock or sand and gravel at the allocated site is likely to have a significant impact on flood risk, water quality or changes in water quantity. Therefore, the conclusions of the Atkins reports have been used to inform the judgement of sustainability effects for this SA objective on water quality and quantity, as well SA objective 13 above on flood risk. However, the Atkins reports state that the conclusions reached are "possible effects that could occur in the absence of appropriate mitigation. It is expected that applicants will complete detailed assessment and develop appropriate mitigation measures. It is likely therefore that the impacts of any particular scheme would not approach those detailed." Although the Atkins reports conclude that there could be a number of significant impacts on water quality from mineral extraction at the potential sites, there is an explanation of the measures that would be included to reduce these impacts, and a conclusion is reached regarding residual effects which are generally negligible for most of the sites. Therefore, it is assumed that the potential significant effects identified in the Atkins reports are very unlikely to occur, and only minor negative	GIS data from GCC relating to Source Protection Zones, analysis of OS base maps for surface water bodies, and information within GCC's site assessments on water-related issues.

[23] The European Water Framework Directive into force in December 2000, and was transposed into UK law by December 2003.

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
	effects on water quality have been identified, with uncertainty attached as they will depend on the detailed proposal for the site and any mitigation measures included, which would be assessed at the planning application stage.		
	++	N/A	
	+	N/A	
	0	• Sites where the Atkins hydrogeological report concludes an insignificant impact on water quality and quantity are not expected to have an effect this objective.	
	-?	• Sites where the Atkins hydrogeological report concludes a significant impact for either water quality or quantity could have a minor negative effect on this objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible.	
	--	N/A	
17. 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 - *What is the capacity of the site and transport infrastructure to support the sustainable movement of minerals and products arising from resource recovery?*	All mineral sites will involve road transportation of minerals with some involving more movements that others. For example, crushed rock quarries typically have larger annual outputs than sand and gravel sites and may therefore involve more traffic movements within and outside of the sites. However, proximity to rail lines/depots/sidings, rivers/canals or wharves could provide opportunities to explore more sustainable modes of transporting waste. The NPPF states that plans and decisions should ensure developments that generate significant movements can maximise the use of sustainable transport modes; and that plans should protect and exploit opportunities for the use of sustainable transport modes for the movements of goods. As discussed above under SA Objective 15, air emissions from transport of minerals 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 minerals 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 to provide some indication of this, the proximity to the strategic high network has been used to assess the potential effects on this objective. For potential sites which are closer to the strategic highway network, it is assumed that lorry traffic would spend less time on local roads, and have less of an impact on nearby communities. Where GCC's site assessment notes that new access routes may be required, this		National datasets and OS base map.

SA Objective and Sub Questions[12]	Score	Justification/reasons for score	Data sources (and limitations)
	could also have a positive effect on communities as it may reduce impact on existing local roads. Some of the sub-questions for this objective are also covered under the assumptions for SA Objectives 4 and 15 above in relation to employee transport opportunities and air quality impacts of lorries travelling on local roads.		
	++	N/A	
	+	Potential sites which are: • Within 1km of the strategic highway network could have a minor positive effect on reducing the impacts of lorry traffic on the environment and communities.	
	0	N/A	
	-	Potential sites which are: • More than 1km from the strategic highway network could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.	
	--	N/A	
18. To reduce contributions to and to adapt to Climate Change. - *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.*	Aggregate quarrying is energy intensive and consequently reducing energy consumption and the industry's overall carbon footprint are important matters. Quarry operations should and do aim to be as energy efficient as possible and implement measures to offset or reduce the size of their carbon footprint, whereby some sites calculate their carbon output per tonne of product. However, it is very difficult to take carbon footprint and therefore potential contributions to and adaptations to climate change into account at this stage in the planning process; as it will depend on the information that proposed developments can provide at the application stage.		No data needed.
	++	N/A	
	+	N/A	
	0	N/A	
	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.	
	-	N/A	
	--	N/A	

5 Sustainability Appraisal Findings

5.1 This Chapter describes the findings of the SA of the MLP Consultation Draft (September 2016) Vision, Objectives, Policies and Site Allocations. A detailed assessment has been undertaken, considering their likely effects against each of the SA objectives. It is difficult, however, to make firm judgements on the potential for effects until full details of mineral proposals (e.g. the exact nature and design of sites) are submitted at the planning applications stage. It is also important to note that for planning applications to be permitted they will need to meet the requirements of all of the relevant policies of the MLP Consultation Draft (September 2016).

Summary of SA Findings for the Vision, Objectives and Policies

5.2 The MLP Consultation Draft (September 2016) includes a proposed Spatial Vision for Gloucestershire at the start of2033, as well as seven Objectives, and a number of Policies. The SA findings for the Vision and Objectives and Policies are summarised below. The full appraisal matrices for the Vision, Objectives and Policies are presented in **Appendix 5**.

Vision

5.3 The Vision for Gloucestershire sets out a positive vision for the future which encourages sustainable economic growth as required by the NPPF, and is likely to have a positive effect on all of the SA objectives as shown in **Table 5.1**.

5.4 Positive effects have been identified for **social** SA objectives, as the Vision aims for Gloucestershire to be a healthy and safe place in which to live, work and visit, and to successfully contribute towards sustainable communities. The Vision also puts the amenity, health and quality of life at the core of the decision making process where mineral working takes place. This will lead to positive effects for SA objectives 1 and 2 which seek to promote sustainable development and sustainable communities, improve health and wellbeing and safeguard the amenity of local communities from the adverse effects of mineral development.

5.5 Contributing to local and national mineral supply by ensuring primary minerals remain an essential part of the county's mineral supply, and ensuring that local mineral resources are integral to delivering renewal, regeneration and growth in the county, should have significant positive effects on **economic** SA objectives 3 (sustainable economic development) and 4 (employment opportunities). Positive effects are likely for SA objective 5 (safety of commercial or military aerodromes) as birdstrike will be minimised at restored mineral sites. The Vision should also have positive effects on SA objective 6 (conservation of minerals resources) because although primary minerals will remain an essential part of the county's mineral supply, greater emphasis will be placed upon maximising the reuse of materials, reducing in-site waste and promoting the most appropriate use of minerals.

5.6 Significant positive effects are expected for many **environmental** SA objectives, including SA objectives 7 (biodiversity), 8 (landscape), 9 (restoration of mineral sites) and 11 (geodiversity). The Vision supports mineral working to act as a positive driver for the protection and enhancement of environmental assets and designations, such as the Cotswolds and Wye Valley Areas of Outstanding Natural Beauty (AONBs). The Vision seeks to ensure that the restoration of mineral sites will be delivered to a high standard, maximising after use benefits and used as a key resource for increasing biodiversity and geodiversity. It therefore supports the protection, conservation and enhancement of biodiversity, geodiversity and landscape in Gloucestershire. The Vision also supports the successful coordination of mineral management in areas such as the Upper Thame Valley, which will be crucial to successful regeneration and restoration of the landscape on that area.

5.7 Ensuring that Gloucestershire will be a cleaner, greener, more healthy and safer place in which to live, work and visit, and the high standard of mineral site restoration that will be provided, will support the protection and enhancement of Gloucestershire's material, cultural and recreational assets, thereby having positive effects on SA objective 10. Furthermore, ensuring specialist minerals have an important role in Gloucestershire's historic and built environment will support the character and cultural assets in the area. The expansion of knowledge of Gloucestershire's archaeological past via mineral working will also have positive effects for SA objective 12 (historic environment, heritage assets and their setting). The Vision seeks to protect and enhance the quality of environmental assets through specifying that mineral develops minimise any adverse impact on flooding (SA objective 13) and the restoration of mineral sites will aim to improve water quality (SA objective 16). It is likely this could also lead to positive effects on SA objective 14 (soil quality) but as this is not specified in the wording of the Vision, effects are currently minor and uncertain.

5.8 SA objectives 15 (air quality), 17 (impacts of lorry traffic) and 18 (climate change) are supported by the Vision, as by the start of 2033, Gloucestershire aims to be a successful contributor towards reducing the impacts of climate change, and seeks to ensure that stricter haulage routes and more efficient practices are used for the transport of minerals, which will reduce the impacts of mineral transportation on local roads and reduce vehicle emissions. However, as the wording of the Vision does not state whether climate change adaptation delivered through the MLP would involve reducing flood risk in Gloucestershire, the positive effect is currently uncertain.

MLP Objectives

5.9 The MLP Objectives are generally compatible with and supportive towards the SA objectives, although there is also no relationship between a number of the SA objectives and the MLP Objectives as the aims of the MLP Objective and SA objective focus on different issues, as shown in **Table 5.1**. For example, MLP Objective 5 (Local Communities) aims to avoid impacts on local communities and businesses, therefore, while it would have minor positive effects on the social and economic SA objectives, it has no effect on or no relationship with most of the environmental SA objectives (e.g. biodiversity, heritage, landscape etc.). Conversely, MLP Objective 4 (The Environment) has no effect or no relationship with the social and economic SA objectives, but positive effects for most of the environmental SA objectives.

5.10 MLP Objectives 1 (Reuse & Recycling), 5 (Local Communities), 6 (Restoration) and 7 (Transport) support the promotion of sustainable development and sustainable communities, improve health and wellbeing and safeguard the amenity of local communities from the adverse effects of mineral development; thereby having minor positive effects on **social** SA objectives 1 and 2. The other three MLP Objectives (2 (Resource Management), 3 (Provision & Supply) and 4 (The Environment) are unlikely to affect the social SA objectives.

5.11 Significant positive effects are identified for **economic** SA objective 6 (conservation of minerals resources), as MLP Objectives 1 (Reuse & Recycling) and 2 (Resource Management) support the conservation of mineral resources through the reuse and recycling of materials thereby encouraging the optimum use of minerals alongside effective resource management through the prevention of mineral sterilisation. MLP Objective 3 (Provision & Supply) is also expected to have significant positive effects on SA objectives 3 (sustainable economic development) and 4 (employment opportunities), as it supports employment and economic development by ensuring that appropriate provision and supply of minerals to meet demand is maintained. MLP Objective 3 could have mixed, minor positive and minor negative effects on SA objective 6 (conservation of minerals resources), as while resources will be worked appropriately to meet the needs of society and not exhausted unnecessarily, minerals are still a finite resource and working them will result in the resources not being available in the future.

5.12 Minor positive effects are expected for SA objectives 4 (employment opportunities) and 5 (Safety of commercial or military aerodromes) as a result of MLP Objectives 5 (Local Communities), 6 (Restoration) and 7 (Transport). These Priorities support sound and enforceable working practices which will mitigate impacts on businesses, encourage and ensure aerodrome safeguarding through mineral sites reclamation, and encourage more sustainable forms of transport and improvements to infrastructure.

5.13 MLP Objectives 2 (Resource Management), 5 (Local Communities), and 7 (Transport) are unlikely to affect the majority of the **environmental** SA objectives (7 – 18). However, positive effects are identified for all environmental SA objectives from at least one of the MLP Objectives. For example, MLP Objective 4 (The Environment) and 6 (Restoration) are expected to have positive effects on the majority of environmental SA Objectives (including significant positive effects on SA objectives 7 (biodiversity), 8 (landscape), 9 (restoration of minerals sites) and 11 (geodiversity), as they seek to conserve, protect and enhance biodiversity, landscape, geodiversity and heritage. They also seek to secure enhanced environmental standards and take a spatial view of after use opportunities for biodiversity, geodiversity, agriculture (including safeguarding soil resources), native woodland, public access, regeneration, the historic environment, recreation and contributing towards reducing climate change impacts. In addition, minor positive effects on SA objectives 10 (cultural and recreational assets), 15 (air quality), 17 (impacts of lorry traffic) and 18 (climate change) are also identified for MLP Objective 7 (Transport) as the aim of this objective is to reduce the amount of road haulage and reduce the impacts of minerals workings on Gloucestershire's roads.

5.14 There are also mixed, minor positive/minor negative effects expected for many of the **environmental** SA objectives. For example, MLP Objective 3 (Provision and Supply) may have minor negative effects on most environmental SA objectives due to the nature of impacts associated with the working or minerals (e.g. traffic, noise, land take, landscape). However, working sites may also have the potential to have positive effects on environmental SA objectives due to the mitigation they can put in place and the benefits and enhancements they can provide during working and once restored (e.g. sympathetic restoration so that sites contribute to the landscape setting, net gains in biodiversity, or by having the potential to contribute towards flood storage).

Table 5.1: Summary of SA scores for the Vision and MLP Objectives

Vision/Objectives SA Objective	Vision	1. Reuse & Recycling (SR)	2. Resource Manage-ment (RM)	3. Provision & Supply (PS)	4. The Environ-ment (ENV)	5. Local Communit-ies (LC)	6. Restora-tion (RA)	7. Transport (MM)
Social								
1. Health and wellbeing	+	+	0	0	0	+	+	+
2. Amenity of local communities	+	+	0	0	0	+	+	+
Economic								
3. Sustainable economic development	++	0	0	++	0	0	+	0
4. Employment opportunities	++	0	0	++	0	+	+	+
5. Safety of commercial or military aerodromes	+	0	0	0	0	+	+	0
6. Conservation of minerals resources	+	++	++	+/-	0	0	0	0
Environmental								
7. Biodiversity	++	+/-	0	+/-	++	0	+	0
8. Landscape	++	+/-	0	+/-	++	0	+/-	0
9. Restoration of mineral sites	++	+	+	0	0	0	++	0
10. Material, cultural and recreational assets	+	0	0	+/-	+	+	+	+
11. Geodiversity	++	0	0	+/-	++	0	+	0
12. Historic environment, heritage assets and their setting	+	0	0	+/-	+	0	+	0
13. Flooding	++	0	0	+/-	+/-	0	+/-	0
14. Soil / land quality	+?	+	+	+/-	+	0	+	0
15. Air quality	+	+/-	0	+/-	+	0	+/-	+
16. Water quality and quantity	++	0	0	+/-	+	0	+/-	0
17. Impacts of lorry traffic on the environment and communities	+	+/-	0	+/-	+	0	+/-	+
18. Climate Change	+	+/-	0	+/-	+	0	+	+

MLP Section 6: Secondary and Recycled Aggregate Supplies

5.15 The SA findings for the one policy in Section 6: Secondary and Recycled Aggregate Supplies Policies of the MLP Consultation Draft (September 2016) are summarised in **Table 5.2**. This Policy covers:

- Policy SR01 Maximising the use of secondary and recycled aggregates.

5.16 There is one significant positive effect attributed to policy SR01 on SA objective 6 (conservation of mineral resources) as through supporting the use of recycled and secondary aggregate, the policy will help reduce the need to work primary minerals which is in direct alignment with the aim of this SA objective.

5.17 Two minor positive effects have been identified for the two economic objectives as the policy would support a wide range of end uses and industries and it is therefore important that there is a sufficient supply of material to supply construction and to provide the infrastructure, buildings, energy and goods that Gloucestershire and the country need which is in line with SA objective 3 (sustainable economic development). In addition, encouragement of secondary and recycled aggregates within the construction of new developments could stimulate growth in the market for these types of aggregate, which in turn could lead to more employment opportunities, thereby creating a positive effect on SA objective 4 (employment opportunities).

5.18 Minor negative effects are identified for the social SA objectives as the policy supports the processing of secondary and recycled aggregates, facilities for which could generate noise and dust that can have adverse effects on local residents, communities and amenity. Similarly, a minor negative effect is expected for SA objective 17 (lorry traffic) as recycled and secondary aggregate activity may promote some additional transportation of materials, which in Gloucestershire is mostly via the road network (lorries) and could therefore contribute to reduced air quality and negatively contribute towards climate change. Conversely, through supporting secondary and recycled aggregate use, the policy reduces the need for primary won aggregate which is usually an energy and emission intensive activity, thereby resulting in a minor positive effect on climate change.

5.19 Similarly to above, mixed effects (minor positive and minor negative) are also identified for many of the environmental SA objectives as policy SR01 encourages operations that cause the production of noise, dust and vibrations that can have adverse effects on biodiversity (SA objective 7), landscape (SA objective 8), material, cultural and recreational assets (SA objective 10), the historic environment (SA objective 12), flooding (SA objective 13), air quality (SA objective 15) and water quality and quantity (SA objective 16) . In contrast, through supporting secondary and recycled aggregate facilities, the demand for primary won aggregates may decline which generally has a greater negative impact on receptors, so a minor positive effect is also identified for these objectives. Furthermore, infrastructure required for recycled and secondary facilities are likely to occur on existing premises for construction/demolition, minerals or waste management thereby reducing potential adverse impacts of such facilities.

Table 5.2 Summary of SA scores for Secondary and recycled aggregate supplies

Policy / SA objective	SR01 Maximising the use of secondary and recycled aggregates
1. Health and wellbeing	-?
2. Amenity of local communities	-?
3. Sustainable economic development	+
4. Employment opportunities	+
5. Safety of commercial or military aerodromes	0
6. Conservation of minerals resources	++

SA objective / Policy	SR01 Maximising the use of secondary and recycled aggregates
7. Biodiversity	+/-?
8. Landscape	+/-?
9. Restoration of mineral sites	0
10. Material, cultural and recreational assets	+/-?
11. Geodiversity	0
12. Historic environment, heritage assets and their setting	+/-?
13. Flooding	+/-?
14. Soil / land quality	0
15. Air quality	+/-?
16. Water quality and quantity	+/-?
17. Impacts of lorry traffic on the environment and communities	-?
18. Climate Change	+

MLP Section 7: Mineral Safeguarding

5.20 The SA findings for the Mineral Safeguarding Policies included in Section 7 of the MLP Consultation Draft (September 2016) are summarised in **Table 5.3**. These Policies cover:

- Policy MS01 Non-minerals development within MSAs.
- Policy MS02 Non-minerals development within MCAs.
- Policy MS03 Safeguarding mineral infrastructure.

5.21 Similar effects are likely for Mineral Safeguarding Polices MS01 (Non-mineral developments within MSAs) and MS03 (Safeguarding Mineral Infrastructure). Mixed minor positive/minor negative effects are expected on over half of the SA objectives from Polices MS01 (Non-mineral developments within MSAs) and MS03 (Safeguarding Mineral Infrastructure), including both of the social objectives (1 and 2), two of the economic objectives (3 and 4) and four of the environmental objectives (8, 10, 12 and 17). This is generally because the Mineral Safeguarding Areas may potentially restrict non-mineral developments that could themselves have negative effects on sensitive receptors such as communities, landscape, heritage assets etc. hence a minor positive effect. However, the MSAs may also lead to mineral extraction activities that could also have negative effects on sensitive receptors, hence the mixed effects identified. In addition, while employment opportunities from non-minerals development may be reduced in some cases within MSAs, they may be gained from minerals extraction in the MSAs. It must be emphasised, however, that the principle of minerals safeguarding does not mean that extraction will be automatically allowed in all areas identified as MSAs, or that non-mineral development will be prevented in these areas. Therefore most effects are uncertain, and will depend very much on the specific nature and design of proposals that come forward within MSAs, which will not be known until the planning application stage.

5.22 Significant positive effects are expected for SA objectives 6 (conservation of mineral resources) for all three policies as the principle of safeguarding, and the definitions of MCAs and MCAs should ensure that mineral resources will be protected from unnecessary sterilisation by other development, and that ongoing mineral extraction activities can continue unhindered by other sensitive land-uses nearby. Due to these considerations in MSAs, geological formations may be preserved and in some instances created, depending on whether mineral extraction takes place,

and this should contribute to maintaining and enhancing geodiversity resulting in a second significant positive effect for Policy MS01, and a minor positive but uncertain effect for Policy MS02.

5.23 While Policy MS03 (Safeguarding minerals infrastructure) has generally similar effects as Policy MS01, it is unlikely to have an effect on SA objectives 5 (aerodrome safety), 9 (restoration), 11 (geodiversity) or 14 (soil/land quality). This is because the nature of the infrastructure to be safeguarded (i.e. existing rail heads, wharves, concrete batching plants etc.) would not attract birds to the sites, would not themselves be restored, are unlikely to contribute to or affect geodiversity and would not lead to loss of agricultural land. Policy MS01 is not considered likely to have any effect on three of the environmental SA objectives: 13 (flooding), 15 (air quality) and 18 (climate change).

5.24 Minor positive effects are identified on Policy MS01 on SA objectives 7 (biodiversity) and 9 (aftercare and restoration) as the potential restriction of non-mineral development in MSAs that would prejudice mineral workings may prevent development that could harm biodiversity. Also, areas used for mineral activity within MSAs, in the long-term, could benefit biodiversity as a result of the restoration of mineral sites. Similarly, if non-mineral developments were restricted following consideration of the proposal within the MSAs, there could be less likelihood of a development occurring that would not result in the same benefits of restoration of the area following mineral extraction. Furthermore, MSAs may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) that could provide benefits via site restoration. Again, these effects are uncertain as the principle of minerals safeguarding does not mean that extraction will be automatically allowed in all areas identified as MSAs, or that non-mineral development will be prevented in these areas, and all effects will be site-specific and based on the nature and design of proposals that come forward within MSAs.

5.25 Policy MS02 (Non-minerals development within MCAs) has more positive effects than the other two safeguarding policies. In particular, significant positive effects are likely to arise on both the social SA objectives from Policy MS02 because the policy seeks to protect sensitive land-uses from adverse effects from minerals development through setting a 250m boundary around a minerals site. These areas would otherwise be exposed to the adverse effects of minerals site if situated too close to minerals workings. In addition, minor positive uncertain effects are likely for the economic SA objectives because other developments such as regeneration schemes or housing would need to be weighed against the need for minerals development and may not be permitted within the MCA boundary. In addition, by safeguarding active mineral sites, plus sites containing unimplemented planning permissions for mineral working, dormant minerals sites, and areas identified in the plan as specific sites, preferred areas and areas of search, Policy MS02 would also have a significant positive effect on SA objective 6 (conservation of mineral resources) and a minor positive effect on SA objective 11 (geodiversity). Different to the other two safeguarding policies, MS02 is likely to have mixed minor positive and negative effects for all of the remaining environmental objectives, as it seeks to ensure that existing mineral operations and future new operations within sites with planning permission or allocated in the MLP can continue, and while there may be some longer term benefits from restoration of mineral sites, extraction activities at any of the sites within MCAs may also have some minor negative effects on the environment. However, these effects are uncertain as they will depend on how well existing sites are operated and the proposals put forward at the planning application stage for future new operations.

Table 5.3: Summary of SA scores for Mineral Safeguarding Policies

Policy / SA Objective	MS01 Non-minerals development within MSAs	MS02 Non-minerals development within MCAs	MS03 Safeguarding mineral infrastructure
1. Health and wellbeing	+/-?	++	+/-?
2. Amenity of local communities	+/-?	++	+/-?
3. Sustainable economic development	+/-	+?	+/-
4. Employment opportunities	+/-	+?	+/-
5. Safety of commercial or military aerodromes	+/-?	0	0
6. Conservation of minerals resources	++	++	++
7. Biodiversity	+?	+/-?	+/-?
8. Landscape	+/-?	+/-?	+/-?
9. Restoration of mineral sites	+?	0	0
10. Material, cultural and recreational assets	+/-?	+/-?	+/-?
11. Geodiversity	++?	+?	0
12. Historic environment, heritage assets and their setting	+/-?	+/-?	+/-?
13. Flooding	0	+/-?	+/-?
14. Soil / land quality	?	+/-?	0
15. Air quality	0	+/-?	+/-?
16. Water quality and quantity	?	+/-?	+/-?
17. Impacts of lorry traffic on the environment and communities	+/-?	+/-?	+/-?
18. Climate Change	0	+/-?	+/-?

MLP Section 8: The Future Supply of Minerals

5.26 The SA findings for all of the Future Supply of Minerals Policies included in Section 8 of the MLP Consultation Draft (September 2016) are summarised in **Table 5.4**. These Policies cover:

- Policy MW01 Aggregate provision.
- Policy MW02 Natural building stone.
- Policy MW03 Clay for civil engineering purposes.
- Policy MW04 Brick clay.
- Policy MW05 Coal.
- Policy MW06 Oil and Gas.
- Policy MW07 Ancillary Development.

5.27 The SA scores are summarised in **Table 5.4** for the above policies, under each SA objective. There is a mix of potentially positive, negative and mixed effects arising from the policies, however, for a number of the SA objectives, negligible and no effects are expected to occur. One significant positive effect has been identified alongside a minor negative effect on SA objective 12 (Historic Environment), and only one potentially significant negative effect (mixed with a minor positive effect) on SA objective 14 (soil/land quality) has been identified.

5.28 Many of the identified effects are also uncertain, as the potential for effects will depend on the exact nature and design of sites, which would not be known until the planning application stage. Also, the proposed policies which have been identified to have potential negative effects on SA objectives will be supported by other policies within the MLP, when determining proposals, which should help to mitigate some of the negative effects identified. Many of the minerals supply policies themselves (e.g. Policy MW01 Aggregate provision) include criteria that need to be met and may also provide mitigation, for example: only permitting operations where the need to maintain the aggregate landbanks is demonstrated and where the key development criteria of the MLP are satisfied. Furthermore,

Social Objectives

*SA Objective 1 (**Health and wellbeing**) and SA Objective 2 (**Amenity**)*

5.29 Nearly all of the minerals supply policies are expected to have some minor negative effects on SA objectives 1 and 2, as they support the continuation of mineral operations within Gloucestershire. This may therefore continue to have effects on health and wellbeing, and the local amenity of communities in Gloucestershire due to impacts such as dust from blasting/drilling and other sources (e.g. haul roads, machinery and stockpiles), vibration, noise and traffic congestion. However, planning applications will be required to meet the criteria of other proposed policies within the MLP Consultation Draft, such as the Development Management Policies identified in Section 10, therefore helping to mitigate the effects on communities, and on the health and wellbeing of people living and working in Gloucestershire. Furthermore, research undertaken for the government[24] concluded that dust generated by surface mineral operations did not result in any specific health impacts, and research for the former Department for the Environment, Transport and the Regions (DETR) found that practice on the assessment and control of noise at surface mineral workings had improved; thereby emphasising that effects are unlikely to be greater than minor. Negligible effects are expected for MW03 as clay sites for engineering purposes are not intensive or extensive and are only contributing to a relatively small-scale demand. Some of the minor negative effects are mixed with a minor positive effect e.g. for MW01 and MW05. Policy MW01 supports maintaining an adequate and steady supply of aggregate minerals, which is vital for the development and maintenance of public infrastructure (road, services, healthcare etc.), and economic development and growth more generally. These matters have an important role to play in establishing sustainable communities. As a consequence, a mixed minor positive and negative effect is identified. Policy MW05 offers a

[24] Office of the Deputy Prime Minister (by Arup Environmental/Ove Arup and Partners). The Environmental Effects of Dust from Surface Minerals Workings, 1995.

presumption against future working of coal unless they are considered to be environmentally acceptable or they provide national, local or community benefits that clearly outweigh impacts likely to arise as a result of their working. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to protecting health and wellbeing of local communities, particularly for those nearby to potentially extractable resources. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably are taken into account means that there may still be some potential effects on health and wellbeing. inimizin.

Economic Objectives

*SA Objective 3 (**Economic development**) and SA Objective 4 (**Employment**)*

5.30 All of the minerals supply policies are expected to have minor positive effects on these economic objectives, except for policy MW05 which could have mixed minor positive/negative effects. The minor positive effects are identified on SA objective 3 as aggregates are important local and national resources and are essential to support sustainable economic growth, and the development of aggregate operations supported by these policies will support economic prosperity and make a positive contribution to the local and national economy. Similarly, nearly all the future supply policies have the potential to have minor positive effects on SA objective 4, as the policies support the supply of minerals, which will have positive effects on increasing employment levels. Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and from an economic / employment perspective this could have a minor negative effect.

*SA Objective 5 (**Aerodrome safety**)*

5.31 There are three aerodrome safeguarding areas within Gloucestershire; these are for Gloucestershire Airport, RAF Fairford and RAF Brize Norton. Gloucestershire Airport is unlikely to be affected by the future minerals supply policies, due to its location in respect of the location of existing and allocated minerals sites and geological resources. However, RAF Fairford and RAF Brize Norton have the potential to be affected by sand and gravel extraction if the workings are restored to open water uses and therefore policy MW01 is the only policy projected to have a minor negative effect on this SA objective. This is because the policy supports the continuation of aggregate operations within the defined Allocations in Gloucestershire to ensure that adequate and steady supplies of aggregates can meet predicted needs. This may include proposals for sand and gravel extracted in the Cotswolds Water Park which is located within and in close proximity to the safeguarding zones for RAF Fairford and RAF Brize Norton. Therefore, Policy MW01 could have minor negative effects on the safety of commercial or military aerodromes if sand and gravel is extracted in the Cotswolds Water Park area, due to the potential for birds to become a hazard to aircraft, which would be associated with restoration of sites to a form of open water use.

5.32 It is difficult to determine whether policy MW03 is likely to affect this SA objective, as the county's clay resources are widespread and occur within and outside of the influence of local aerodromes[25]. The remaining policies are expected to have negligible effects on this SA objective as these types of mineral sites are likely to be outside of aerodrome safeguarding areas, and/or the restoration of these sites is unlikely to cause effects that would compromise the safety of commercial or military aerodromes

*SA Objective 6 (**Conservation of mineral resources**)*

5.33 Five of the future minerals supply policies are unlikely to affect SA objective 6, as minerals sites permitted under these policies will not be classed as inappropriate development, as they are contributing to the extraction of mineral resources, not limiting the ability to extract resources. However, policies MW01 and MW02 could have minor positive effects. Policy MW01 could have a minor positive effect in terms of providing for the supply of aggregates sufficient for the needs of society, as the core aim of the policy is to facilitate steady and adequate supplies. Similarly, Policy MW02 could have a minor positive effect in terms of the conservation of mineral (building stone) resources from inappropriate development as the core aim of the policy is to facilitate

[25] See paragraphs 51, 52 and 379 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

sufficient supplies of mineral that will meet local need, including maintenance of the historic built environment.

Environmental Objectives

*SA Objective 7 (**Biodiversity**) and SA Objective 8 (**Landscape**)*

5.34 All minerals supply policies are expected to have mixed minor positive/minor negative effects on SA objectives 7 and 8, as the policies could lead to proposals that could have potential impacts on designated biodiversity sites, protected species or habitats, landscape or landscape character, or be located within landscape designations (e.g. Cotswolds or Wye Valley AONBs). However, it may be appropriate and sustainable to make provision for some aggregate extraction in designated landscapes (e.g. the Cotswolds resource area) to meet local need. These policies could also have positive effects on these SA objectives, as many sites may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist, or the policies may lead to the sympathetic restoration of sites that could have positive effects on landscape character.

*SA Objective 9 (**Mineral site restoration**)*

5.35 Four of the minerals supply policies (MW01, MW02, MW06 and MW07) have been identified to have minor positive effects on SA objective 9, as sites that come forward may have the potential to be restored to a high standard, achieving maximum after use benefits and enhancing the landscape and biodiversity. Policies MW03, MW04 and MW05 are unlikely to affect this objective because they offer no specific provisions relating to achievement of certain standards of mineral restoration or support for the conservation and / or enhancement of certain post-extraction activity or land-uses.

*SA Objective 10 (**Material, cultural and recreational assets**)*

5.36 Two of the minerals supply policies (MW03 and MW07) are expected to have negligible effects on SA objective 10, as aggregate workings determined by the policies are unlikely to meaningfully protect, conserve or enhance Gloucestershire's material, cultural or recreational assets. The remaining policies are likely to have mixed minor positive and negative effects because they could support sites coming forward which could have potential negative effects on the access to and the enjoyment of recreational facilities (e.g. Public Rights of Way), although this is uncertain and may not be the case for all sites, and where there is the potential for effects upon recreation they will be temporary. However, they could all have minor positive effects because post-working restoration could offer opportunities to enhance these recreation assets. Policy MW02 is also likely to have minor positive effects as natural building stone is likely to contribute to conserving and maintaining the local distinctiveness of Gloucestershire and support the use of traditional, local building stones, thereby conserving and enhancing Gloucestershire's material, cultural and recreational assets. A minor positive effect is also likely for Policy MW05 as coal workings is limited to the Forest whereby it has been traditionally worked a small scale thereby this policy is predicated to help maintain the heritage and culture of the area.

*SA Objective 11 (**Geodiversity**)*

5.37 All of the minerals supply policies, aside from policy MW07 are likely to have mixed minor positive/minor negative effects on SA Objective 11, as the continued or new extraction and/or processing of primary aggregate may uncover and harm geological interests. Conversely, extraction sites can also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities.

5.38 Policy MW07 is not expected to have any effects on SA objective 11, as ancillary aggregate facilities in Gloucestershire are unlikely to affect geodiversity due to their nature, scale and type of operation.

*SA Objective 12 (**Historic environment and heritage assets**)*

5.39 Policy MW02 is predicted to have a significant positive effect on this SA objective as the policy encourages the workings of natural stone that can be used to augment the existing building stock in the county. The use of local stone will help conserve buildings using similar, local building stones, thereby helping to conserve and enhance Gloucestershire's historic environment, heritage assets and their setting. Sites permitted by the policy may also be able to preserve

archaeological findings and therefore benefit our understanding of the local archaeology. A minor negative effect is also identified for this policy because the workings of some sites may disrupt archaeological remains and minerals activity can have adverse effects on historic assets and their setting through dust, noise and visual impacts for example. The same reason applies to the minor negative effects attributed to Polices MW01, MW04, MW06 and MW07. Policies MW01 and MW04 may also have minor positive effects if archaeological findings are able to be preserved. All of these mixed effects are uncertain as it depends on specific proposals that come forward at the planning application stage.

5.40 Negligible effects are expected for policies MW03 and MW07 as clay workings for civil engineering purposes are not intensive and small scale, and ancillary development generally occurs within existing minerals and other development sites and are thereby considered unlikely to affect this SA objective.

*SA Objective 13 (**Flooding**)*

5.41 Three of the minerals supply policies (MW04, MW06 and MW07) are likely have negligible effects on flood risk areas, as they are classed as less vulnerable uses, which means these sites are potentially compatible with all flood zones except for Flood Zone 3b, which they are unlikely to be located within, and are therefore not expected to affect this SA objective. Sand and gravel extraction sites are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain, and therefore have the potential to increase flood capacity and have minor positive effects on this SA objective. Also, Policy MW07 encourages other fixed and temporary facilities to be associated with mineral workings, which is also not expected to affect this SA Objective.

5.42 Policies MW01 and MW02 are expected to have an uncertain, minor negative effect on flood risk areas, as MW01 supports aggregate operations within the ten Allocations, and the Atkins hydrogeological reports (March 2016) have identified potentially significant effects on flood risk for all of the ten Allocations, due mainly to backfilling during restoration using low permeability material. Similarly, Policy MW02 may have a negative effect upon the risk of flooding by virtue of facilitating building stone working, which has the potential to be disruptive to existing hydrological systems. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward within the Allocations, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts.

5.43 Policy MW03 by contrast could have a minor positive, uncertain effect on reducing flooding, because the supporting text to the policy notes that proposals to extract clay for engineering purposes which support the deliverability of critical local infrastructure such as flood defence work could be supported, therefore, the policy may contribute to reducing flooding in some areas and could have a minor positive effect on this SA objective.

*SA Objective 14 (**Soil / land quality**)*

5.44 Almost all the minerals supply policies may potentially have minor negative effects on SA objective 14 , as all mineral extraction sites could range from small to medium scale (i.e. less than 20ha) to large (i.e. over 20ha), and therefore have the potential to impact on soil/land quality. However, the exact land take and extent of agricultural land quality (i.e. Grades 1 – 5) will not be known until the planning application stage. Similarly, any opportunities for improvements to soil quality through site restoration which could be possible will not be known until specific proposals come forward. However, Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and it could therefore also have a minor positive effect with respect to preserving soil/land quality.

5.45 Policy MW07 is likely to have a negligible effect as ancillary development usually occurs on existing minerals sites therefore it is unlikely for any additional land to be worked through this policy.

*SA Objective 15 (**Air Quality**)*

5.46 Minor negative effects are likely on this SA objective from policy MW01 because the policy supports minerals workings that require the transportation of minerals (which is predominantly by lorry) that contributes to poor air quality. Policy MW06 could encourage flaring of gas as well as increased transport movements associated with the oil and gas industry, which both contribute to poor air quality therefore also resulting in a minor negative effect on this SA objective.

5.47 Mixed effects are expected for Policy MW02, MW04 and MW05 on this SA objective as the distribution of natural stone and brick clay is usually confined to the local rural areas including the AONBs within the county which are not usually on the primary road network thereby increasing traffic movement and associated emissions resulting in a minor negative effect. However, working natural stone and brick clay is generally on a lesser scale compared to other mineral industries and therefore its associated transportation mileage is less leading to a predicted minor positive effect. Policy MW05 could have a mixed effect because although air pollution could arise from coal workings, the policy offers a strong presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated, hence the minor positive effect as well.

5.48 The remaining mineral supply policies are considered unlikely to have an effect on air quality due to their small-scale and localised nature.

*SA Objective 16 (**Water quality and quantity**)*

5.49 While all the minerals supply policy policies have some potential to affect water quality and quantity in Gloucestershire, at this stage in the planning process it is not possible to determine the impacts of all of these policies on water quality (surface or groundwater) or water use and efficiency, as it will very much depend on the specific proposals (location, design, method of working etc.) that come forward, which would be assessed at the planning application stage. Therefore, effects are generally uncertain for SA objective 16, apart from Policy MW07 where ancillary workings are situated on existing mineral sites and is therefore unlikely to affect this SA objective resulting in a negligible effect.

5.50 By contrast, Policy MW01 could have a minor negative effect, as it supports aggregate operations within the ten Allocations, and the Atkins hydrogeological reports (March 2016) have identified potentially low, moderate and significant effects on water quality and quantity for all of the ten Allocations, due mainly to dewatering and diversion of groundwater, and increases in suspended solids or discharges of polluted water. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward within the Allocations, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts. Policy MW05 could have a mixed effect for the same reasons as explained above; although coal workings could impact on water quality and quantity, the policy offers a strong presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated, hence the minor positive effect as well.

*SA Objective 17 (**Lorry traffic**)*

5.51 Over half of the minerals supply policies are likely to have a minor positive effect on this SA objective as building stone (MW02) clay for civil engineering (MW03), brick clay (MW04) and coal (MW05) are likely to have low outputs compared to other mineral sites and therefore have lower lorry traffic movements. The minor negative effects for MW02, MW04 and MW05 is attributed to the fact that natural stone, brick clay and coal are generally located mainly within rural areas that are usually located beyond the primary road routes and could lead to increased lorry movement. Policy MW07 could also have a minor positive effect because it requires materials from ancillary production to be sourced on site or from the most sustainable location, both of which will reduce the amount of transportation. Policies MW01 and MW06 could have minor negative effects as primary aggregate proposals will involve lorry traffic movements, which as some sites may comprise multiple movements per day, and the levels of lorry traffic associated with oil and gas sites can be substantial due to the transport of water used in operations and the transportation of extracted oil and gas. The exact location of proposals, traffic levels, lorry routing and access

arrangements will not be known until the planning application stage, therefore these effects are uncertain.

SA Objective 18 (**Climate change**)

5.52 Policy MW07 requires materials to be used by ancillary production are to be sourced on site or from the most sustainable location, both of which will reduce the amount of transportation therefore reducing climate change contributions, therefore it is the only policy to have a straight minor positive effect. The rest of the policies are expected to have mixed minor positive and negative effects on this SA objective. They all facilitate new minerals development, which involves energy intensive activities and use fossils fuels (and in particular policies MW05 and MW07 facilitate the workings of coal, oil and gas which themselves contribute to greenhouse gas emissions). However, the policies do advocate making use of local provision of minerals, which should diminish the need to import aggregates and other minerals from distances that carry a larger carbon footprint.

Table 5.4: Summary of SA scores for the Future Supply of Minerals

Policy / SA Objective	MW01 Aggregate Provision	MW02 Natural Building Stone	MW03 Clay for civil engineering purposes	MW04 Brick Clay	MW05 Coal	MW06 Oil and Gas	MW07 Ancillary Development
1. Health and wellbeing	+/-?	0/-?	0?	0/-?	+/-?	-?	-?
2. Amenity of local communities	-?	0/-?	0?	0/-?	+/-?	-?	-?
3. Sustainable economic development	+	+?	+?	+?	+/-?	+?	+
4. Employment opportunities	+	+?	+?	+?	+/-?	+?	+
5. Safety of commercial or military aerodromes	-?	0	?	0	0	0	0
6. Conservation of minerals resources	+	+	0	0	0	0	0
7. Biodiversity	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?
8. Landscape	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?
9. Restoration of mineral sites	+?	+?	0	0	0	+?	+
10. Material, cultural and recreational assets	+/-?	+/-?	0?	+/-?	+/-?	+/-?	0
11. Geodiversity	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	0
12. Historic environment, heritage assets and their setting	+/-?	++/-?	0?	+/-?	+/-?	+/-?	0
13. Flooding	-?	-?	+?	0?	+/-?	0?	0
14. Soil / land quality	-?	-?	-?	-?	+/-?	-?	0
15. Air quality	-?	+/-?	0?	+/-?	+/-?	-?	0
16. Water quality and quantity	-?	?	?	?	+/-?	?	0
17. Impacts of lorry traffic on the environment and communities	-?	+/-?	+?	+/-?	+/-?	-?	+?
18. Climate Change	+/-?	+/-?	+/-?	+/-	+/-?	+/-?	+?

MLP Section 9: Areas for Future Aggregate Working

5.53 The SA findings for the Area for Future Aggregate Working included in Section 9 of the MLP Consultation Draft Document (September 2016) are summarised in **Table 5.5** below. These proposed policies cover:

- Policy MA01 Aggregate working within site allocations.
- Policy MA02 Aggregate working outside of site allocations.

5.54 Under Policy MA01 Aggregates working within site allocations, the ten sand and gravel and crushed rock site Allocations are presented. The sites, preferred areas and areas of search making up these ten Allocations have each been appraised, and the findings are presented further ahead in this chapter of the SA Report, and **Appendix 6**.

5.55 These two policies are likely to have the same effects on all of the SA objectives. Minor negative effects are likely on SA objectives 1 (health and wellbeing) and 2 (amenity) as both policies support aggregate operations in Gloucestershire which will subject local communities to adverse effects associated with these minerals workings such as dust, noise and increased traffic, thus affecting their well-being and the local amenity.

5.56 In contrast, positive effects are likely on both SA objectives 3 (sustainable economic development) and 4 (employment opportunities) as aggregates support a wide range of end uses and industries and it is therefore important that there is a sufficient supply of material to supply construction and to provide the infrastructure, buildings, energy and goods that Gloucestershire and the country need.

5.57 Policies MA01 and MA02 would support aggregate workings for sand and gravel extracted in the Cotswolds Water Park which is located within and in close proximity to the safeguarding zones for RAF Fairford and RAF Brize Norton. Therefore, this policy could have minor negative effects on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft.

5.58 Mixed effects are likely for SA objectives 7 (biodiversity), 8 (landscape), 10 (material, cultural and recreational assets), 11 (geodiversity) and 12 (historic environment). The minor negative effects are associated with aggregate workings resulting in adverse effects on biodiversity (including habitats and designated sites), landscape (the presence of machinery and building structures), recreational assets (e.g. Public Rights of Way), geodiversity and the historic environment (the noise and visual intrusiveness can affect the setting of historic assets). Following the termination of aggregate workings, Policy MA02 stipulates that the site needs to be restored therefore resulting in a minor positive effect. Although policy MA01 does not specify any restoration requirements, restoration is likely to be fulfilled through the site plans found in Appendix 6 of the MLP Draft Consultation Document (September 2016), thereby resulting in minor positive effects for these SA objectives.

5.59 SA objective 11 (geodiversity) is also likely to encounter mixed effects from these policies as the continued extraction and/or processing of primary aggregate may uncover and harm geological interests leading to a minor negative effect. However, a minor positive effect is also identified as potential sites can also contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities.

5.60 Both policies could have minor negative effects on SA objectives 13 to 17. Flooding (SA objective 13) is likely to result in minor negative effects as the Atkins hydrogeological reports identified potentially significant effects on flood risk for all of the ten Allocations, due mainly to backfilling during restoration using low permeability material. Other extraction proposals on sites outside of the Allocations could have similar effects on flooding. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts..

5.61 Policies MA01 and MA02 are likely to lead to mineral site workings that could result in the loss of land of varying agricultural quality (Grades 1-5) thereby resulting in minor negative effects for SA objective 14 (soil / land quality). It is uncertain how these polices are likely to affect SA objective

16 (water quality) as it would depend on the location of the site and proposed methods of working.

5.62 Policies MA01 and MA02 could have uncertain, minor negative effects on SA objective 16 (water quality and quantity), as the Atkins hydrogeological reports identified potentially low, moderate and significant effects on water quality and quantity for all of the ten Allocations (due mainly to dewatering and diversion of groundwater, and increases in suspended solids or discharges of polluted water). These same effects could occur on extraction sites that come forward outside of the Allocations as well.

5.63 Promoting aggregate workings through Policies MA01 and MA02 result in minor negative effects for air quality (SA objective 15) and impacts on lorry traffic on the environment and communities (SA objective 17) as aggregate activities are likely to involve increased lorry traffic and the production of dust which result in adverse effects for air quality.

5.64 At this stage in the planning process it is not possible to determine the impacts of either policy on their ability to help reduce contributions to and to adapt to climate change as it will depend on the specific proposals they are used to determine and how successfully they are implemented, which would not be known until the planning application stage.

Table 5.5: Summary of SA scores for the Area for Future Aggregate Working

Policy / SA Objective	MA01 Aggregate working within site allocations	MA02 Aggregate working within site allocations
1. Health and wellbeing	-?	-?
2. Amenity of local communities	-?	-?
3. Sustainable economic development	+	+
4. Employment opportunities	+	+
5. Safety of commercial or military aerodromes	-?	-?
6. Conservation of minerals resources	0	0
7. Biodiversity	+/-?	+/-?
8. Landscape	+/-?	+/-?
9. Restoration of mineral sites	+?	+?
10. Material, cultural and recreational assets	+/-?	+/-?
11. Geodiversity	+/-?	+/-?
12. Historic environment, heritage assets and their setting	+/-?	+/-?
13. Flooding	-?	-?
14. Soil / land quality	-?	-?
15. Air quality	-?	-?
16. Water quality and quantity	-?	-?

SA Objective / Policy	MA01 Aggregate working within site allocations	MA02 Aggregate working within site allocations
17. Impacts of lorry traffic on the environment and communities	-?	-?
18. Climate Change	?	?

MLP Section 10: Development Management Policies

5.65 The MLP Consultation Draft (September 2016) includes a number of development management policies, in Section 10 (Development Management). The SA findings for the Development Management Policies included in Sections 10 of the MLP Consultation Draft (September 2016) are summarised in **Table 5.6.**

5.66 In general, the proposed development management policies are only likely to affect a limited number of the SA objectives as they are 'topic-specific' policies (e.g. flood risk, landscape, biodiversity etc.). Therefore, a number of negligible effects are identified for many of the SA objectives. Where the development management policies are likely to affect SA objectives, the effects are generally positive, with some significant positive effects identified (as highlighted in bold text in the following sections).

Policy DM01: Amenity

5.67 This policy is expected to have a positive effect is on health and wellbeing (SA objective 1) as minerals development will only be permitted where adverse impacts on local communities in terms of noise, air pollution, vibration and visual intrusion can be avoided or mitigated.

5.68 In addition, Policy DM01 is expected to have **a significant positive effect on the amenity of local communities** (SA objective 2) as its purpose is to ensure that mineral developments avoid or mitigate adverse impacts on the amenity of local communities in Gloucestershire and neighbouring areas by means of noise, air pollution, vibration and visual intrusion.

Policy DM02: Cumulative Impact

5.69 This policy requires that when determining applications for minerals related development the Council will have regard to: the cumulative effects of previous and existing minerals development on local communities; to social cohesion and inclusion; and that an assessment of health, noise, dust, and odour impacts is included. As such, a positive effect is expected on health and wellbeing (SA objective 1) and the amenity of local communities (SA objective 2).

5.70 Policy DM02 also requires regard to be given to economic potential, which suggests that positive effects can be expected on sustainable economic development (SA objective 3) and employment opportunities (SA objective 4).

5.71 In addition, positive effects are expected on the majority of environmental objectives, as regard should be given to environmental quality. However, all of the minor positive effects identified are uncertain as the policy does not specifically refer to reducing impacts on particular sensitive receptors.

Policy DM03: Transport

5.72 Policy DM03 is expected to have positive effects on a number of SA objectives. Minor positive effects are expected on health (SA objective 1) and the amenity of local communities (SA objective 2), as the policy restricts mineral developments that would generate adverse traffic impacts on residential amenity.

5.73 Policy DM03 may also have positive effects on a number of the environmental objectives as it encourages alternative modes of transport and requires development proposals to demonstrate unacceptable adverse impacts on road safety and the highway network will be avoided. Minor positive effects are therefore expected on biodiversity (SA objective 7), landscape (SA objective 8), the historic environment (SA objective 12), and climate change (SA objective 18). In

addition, as the policy directly addresses **air quality** (SA objective 15) and **supports sustainable transport modes** (SA objective 17), **the positive effects on these objectives are expected to be significant**. In addition to the highway network, Policy DM03 requires minerals development proposals to demonstrate that Public Rights of way (PRoWs) will be retained, or if temporary or permanent diversion of PRoW routes is required that these are justified and that unacceptable adverse impacts will be avoided or satisfactorily mitigated (e.g. on the safety, integrity and enjoyment of affected routes). Therefore, it is likely to have a positive effect on conserving and enhancing some of Gloucestershire's recreational assets (SA objective 10).

Policy DM04: Flood Risk

5.74 Flooding can endanger lives, damage settlements, the amenity of local communities, and can also adversely affect the health of people[26]. As Policy DM04 seeks to reduce the likelihood and impact of flooding related to mineral workings, it is expected to have a positive effect on health (SA objective 1) and the amenity of local communities (SA objective 2) that may otherwise by adversely affected by flooding. It would also have a positive effect on adaptation to the impacts of climate change (SA objective 18).

5.75 As Policy DM04 directly relates to flooding issues, a **significant positive effect is expected on reducing flooding** (SA objective 13). In addition, by reducing the likelihood of flooding, there may be associated positive effects on biodiversity (SA objective 7), landscape (SA objective 8), material assets (SA objective 10), and heritage assets (SA objective 12) that may otherwise be adversely affected by flooding. Policy DM04 requires mineral development proposals in Flood Zone 3b to be 'water compatible' development, and in some cases mineral development e.g. sand and gravel workings can possibly assist in adding to flood capacity where the restoration is water based and does not lead to a net loss in flood plain storage. Therefore, it could have a positive effect on water-based restoration of mineral sites (SA objective 9).

Policy DM05: Water Environment

5.76 As this policy specifically seeks to protect water quality, ensuring any potentially harmful effects of minerals extraction are avoided and/or satisfactorily mitigated, a **significant positive effect is expected on water quality** (SA objective 16). There are also likely to be associated positive effects on health (SA objective 1) by protecting public drinking water supplies and on biodiversity (SA objective 7) by protecting aquatic ecosystems.

Policy DM06: Biodiversity and Geodiversity

5.77 Policy DM06 requires all minerals development proposals to assess their impact on biodiversity and geodiversity, and is therefore expected to have a **significant positive effect on biodiversity and geodiversity** (SA objectives 7 and 11). As minerals restoration can have a major role in enhancing the natural environment[27], Policy DM06 is also likely to have a minor positive effect on landscape (SA objective 8) due to the strong relationship between landscape and habitats.

Policy DM07: Soils

5.78 As this policy seeks to avoid unacceptable adverse impacts on the quality of soil resources as defined through the Best and Most Versatile agricultural land grades, a **significant positive effect is expected on soil quality** (SA objective 14) as the policy directly relates to soil resources in Gloucestershire. There may also be positive effects on employment opportunities (SA objective 4), in particular within the agriculture industry.

Policy DM08: Historic Environment

5.79 This policy is likely to have **significant positive effects on the historic environment** (SA objective 12), as the main aim of the policy is to avoid and/or satisfactorily mitigate harm to the significance of heritage assets, scheduled monuments and other non-designated assets of archaeological interest. As such Policy DM08 is likely to have a positive effect on landscape (SA

[26] Gloucestershire County Council. Planning and Environmental Considerations Evidence Paper to Support the MLP Site Options and Draft Policy Framework Consultation. March 2014.

[27] Gloucestershire County Council. Planning and Environmental Considerations Evidence Paper to Support the MLP Site Options and Draft Policy Framework Consultation. March 2014.

objective 8) as the policy also protects historic landscapes and conservation areas and listed buildings which are located within these landscapes.

Policy DM09: Landscape

5.80 This policy is likely to have positive effects on landscape (SA objective 8) by avoiding unacceptable adverse impacts on the wider landscape as well as valued landscapes of AONB designations or those forming part of their setting. Positive effects from Policy DM09 are expected to be **significant for landscape**. In addition, this policy is expected to have associated positive effects on biodiversity (SA objective 7), restoration (SA objective 9), and cultural and recreational assets (SA objective 10).

5.81 Policy DM09 may also have positive effects on amenity of local communities (SA objective 2) as the policy aims to prevent adverse effects of minerals development on the local landscape and ensuring AONBs are safeguarded from adverse effects, and appropriately considered and enhanced via restoration in the longer term. In addition, the policy might have an indirect minor positive effect on economic development (SA objective 3) as it requires minerals development proposals within the Cotswolds, Wye Valley and Malvern Hills AONBs to demonstrate that the local economy will not be subject to unacceptable adverse impacts.

Policy DM10: Gloucester-Cheltenham Green Belt

5.82 Policy DM10 may have positive effects on health and wellbeing (SA objective 1) as maintaining the extent of open space in the countryside may encourage recreational uses for residents thus promoting healthier lifestyles. A positive effect is also likely on amenity of local communities (SA objective 2) as the policy aims to preserve the openness of the Green Belt which will be likely to help protect the visual amenity of residents and visitors alike.

5.83 This policy is likely to have positive effects on biodiversity (SA objective 7) and landscape (SA objective 8) by as it seeks to ensure that minerals development within the Green Belt preserves its openness, which can contribute to landscape character, and retention of greenfields and hedgerows within the Green Belt contributes to biodiversity.

Policy DM11: Aerodrome safeguarding and aviation safety

5.84 Due to the specific nature of Policy DM11, no effects are expected on the majority of SA objectives. As the policy directly safeguards the safety of aerodromes by restricting mineral developments that may pose a hazard to aviation safety, a **significant positive effect is expected for SA objective 5** (safety of commercial or military aerodromes).

Table 5.6: Summary of SA scores for Development Management Policies in Section 10 of the MLP Consultation Draft (September 2016)

MLP Proposed Development Management Policies / SA Objectives	Amenity	Cumulative Impact	Transport	Flood Risk	Water Environment	Biodiversity & Geodiversity	Soils	Historic Environment	Landscape	Gloucester-Cheltenham Green Belt	Aerodrome safeguarding & Aviation Safety
1. Health and wellbeing	+	+?	+?	+	+	0	0	0	0	+	0
2. Amenity of local communities	++	+?	+?	+	0	0	0	0	+	+	0
3. Sustainable economic development	0	+?	0	0	0	0	0	0	+?	0	0
4. Employment opportunities	0	+?	0	0	0	0	+?	0	0	0	0
5. Safety of commercial or military aerodromes	0	0	0	0	0	0	0	0	0	0	++
6. Conservation of minerals resources	0	0	0	0	0	0	0	0	0	0	0
7. Biodiversity	0	+?	+?	+	+	++	0	0	0	+	0
8. Landscape	0	+?	+?	+	0	+	0	+	++	+	0
9. Restoration of mineral sites	0	0	0	+?	0	0	0	0	+?	0	0
10. Material, cultural and recreational assets	0	+?	+	0	0	0	0	0	0	0	0
11. Geodiversity	0	+?	0	0	0	++	0	0	0	0	0
12. Historic environment, heritage assets and their setting	0	+?	+?	+	0	0	0	++	+?	0	0
13. Flooding	0	+?	0	++	0	0	0	0	0	0	0
14. Soil / land quality	0	+?	0	0	0	0	++	0	0	0	0
15. Air quality	0	+?	++?	0	0	0	0	0	0	0	0
16. Water quality and quantity.	0	+?	0	0	++	0	0	0	0	0	0
17. Impacts of lorry traffic on the environment and communities	0	+?	++?	0	0	0	0	0	0	0	0
18. Climate Change	0	+?	+?	+	0	0	0	0	0	0	0

MLP Section 11: Mineral Restoration

5.1 The SA findings for the Mineral Restoration Policy included in Section 11 of the MLP Draft Document (September 2016) are summarised in **Table 5.7**. This Policy covers:

- Policy MR01 Restoration, aftercare and facilitating beneficial after-uses.

5.2 The majority of effects from policies relating to the restoration policy would be uncertain as effects would be dependent on the type of restoration proposed and eventually implemented on a site, which will not be known until a later stage in the planning application process.

5.3 As the policy directly relates to the restoration of mineral sites, it is expected to have a **significant positive effect on restoration** (SA objective 9), by seeking to ensure that mineral sites are restored at the earliest opportunity and to an acceptable environmental condition. In general, the policy is also likely to have positive effects on the environmental and social objectives because it requires proposals to demonstrate that beneficial and sustainable after-0uses will be facilitated that will positively contribute towards improvements to environmental quality, biodiversity and/or the health, well-being and quality of life of local communities. Therefore, minor positive effects are identified on biodiversity (SA objective 7), flooding (SA objective 13), water quality and quantity (SA objective 16), as well as health and well-being of local communities (SA objective 1) and their amenity (SA objective 2). These effects would be uncertain as it is dependent on the specific type of restoration proposed and eventually developed on a site.

5.4 Minerals site restoration is expected to have negligible effects on economic SA objectives as environmental improvement in is unlikely to bring effects to the local economy.

Table 5.6: Summary of SA scores for Minerals Restoration

Policy SA Objective	MR01 Restoration aftercare and facilitating beneficial after-uses
1. Health and wellbeing	+?
2. Amenity of local communities	+?
3. Sustainable economic development	0
4. Employment opportunities	0
5. Safety of commercial or military aerodromes	0
6. Conservation of minerals resources	0
7. Biodiversity	+?
8. Landscape	+?
9. Restoration of mineral sites	++
10. Material, cultural and recreational assets	0?
11. Geodiversity	+?
12. Historic environment, heritage assets and their setting	0?
13. Flooding	+?
14. Soil / land quality	+?
15. Air quality	0?
16. Water quality and quantity	+?
17. Impacts of lorry traffic on the environment and communities	0

SA Objective	Policy MR01 Restoration aftercare and facilitating beneficial after-uses
18. Climate Change	+?

Summary of SA Findings for the Allocations

5.5 Policy MA01: Aggregate working within site allocations in Section 9 of the MLP Consultation Draft (September 2016) lists the ten Allocations where the principle of mineral working for aggregates has been accepted. The ten Allocations include one Specific Site (MLP Allocation 6: Manor Farm, Kempsford), which is the most certain of the allocations to be developed within the plan period. This site is already subject to a detailed planning proposal for sand and gravel aggregate working, which has already been scrutinised by the MPA and a Council resolution has been passed in support of a recommendation to conditionally approve the proposal subject to the satisfactory completion of a legal agreement. There are also six Preferred Areas within the Allocations, which represent a less certain option than Specific Sites, although they have a reasonable prospect of coming forward at some stage during the plan period due to the presence of workable mineral resources, operator interest and the views of landowners regarding future working. Finally, the ten Allocations include three Areas of Search, which are the least certain type of allocations, as while there is some knowledge of mineral resources and some previous interest expressed by stakeholders, none of these Areas of Search presently have the same level of industry interest as expressed with the Preferred Areas of Specific Site.

5.6 The findings of the SA matrices for the ten Allocations are summarised in **Table 5.8** below. Note that all of the Allocations are made up of one or more land parcels that were appraised in 2014/15 at the Site Options and Development Framework stage. However, some of the Allocations comprise separate land parcels, therefore more than one SA matrix has been prepared in these cases, as shown below (with reference to the codes previously used by GCC in 2014/15):

- Allocation 01 – Preferred Area at Stowe Hill / Clearwell (Previously CRFD1 Stowe Hill/Clearwell Parcels A & B).
- Allocation 02 – Preferred Area at Drybrook (previously CRFD2 Drybrook Parcel A).
- Allocation 03 – Preferred Area at Stowfield (previously CRFD3 Stowfield Parcel C).
- Allocation 04 – Preferred Area at Daglingworth (previously CRCW1 Daglingworth Parcel A).
- Allocation 05 – Preferred Area at Huntsmans (part of previous CRCW2 Huntsmans Parcel A).
- Allocation 05 – Preferred Area at Huntsmans (previously CRCW2 Huntsmans Parcel C).
- Allocation 06 - Specific Site at Manor Farm, Kempsford (previously SGCW4 Kempsford/Whelford Parcel C).
- Allocation 07: Preferred Area at Redpool's Farm, Twyning (previously SGTW2 Redpools Farm Parcels A, B, C & D).
- Allocation 08 – Area of Search at Lady Lamb Farm, Fairford (previously SGCW3 Horcott/Lady Lamb Farm Parcel A).
- Allocation 09 – Areas of Search at Land between Kempsford & Whelford (previously SGCW4 Kempsford/Whelford Parcel B).
- Allocation 09 – Areas of Search at Land between Kempsford & Whelford (previously SGCW4 Kempsford/Whelford Parcel E).
- Allocation 09 – Areas of Search at Land between Kempsford & Whelford (previously SGCW4 Kempsford/Whelford Parcel F).

- Allocation 10 - Areas of Search at Down Ampney and Charlham Farm (previously SGCW6 Charlham Farm Parcel A).
- Allocation 10 - Areas of Search at Down Ampney and Charlham Farm (previously SGCW5 Down Ampney Parcels A, B & C).

5.7 There is a mix of potentially positive and negative effects arising from the development of the Allocations for mineral extraction, however, for some of the SA objectives, no effect is expected to occur. The potential for **significant negative effects** has only been identified for some of the sites on the SA objectives relating to **landscape** (SA Objective 8), **cultural and recreational assets** (SA Objective 10), **geodiversity** (SA Objective 11), **historic environment and heritage assets** (SA Objective 12) and **soil/land quality** (SA Objective 14).

5.8 Mitigation of the potentially negative effects could be achieved through implementation of good operational practices, adherence to the development management policies in the MLP, and requiring certain surveys or detailed assessments to be undertaken as part of the planning application process. These requirements are included within the detailed development requirements for each Allocation in Appendix 6 in the MLP Consultation Draft (September 2016).

Social Objectives

*SA Objective 1 (**Health and wellbeing**)*

5.9 Seven of the Allocations may have a minor negative effect on SA objective 1 due to them being within proximity of nearby sensitive receptors (e.g. properties and settlements). However, some of the Allocations, or areas within them, are expected to have no effect on health, as they are further than 100m from sensitive receptors. The Allocations likely to have no effect are: 03: Preferred Area at Stowfield; 04: Preferred Area at Daglingworth; 05: Preferred Area at Huntsmans (part of previous CRCW2 Parcel A); 06: Specific Site at Manor Farm, Kempsford; 09: Areas of Search at Land between Kempsford & Whelford (Previously SGCW4 Parcel B) and 10: Areas of Search at Down Ampney and Charlham Farm (Previously SGCW6 Charlham Farm Parcel A). It should be noted that mineral extraction at any of the potential sites will be well operated and that mitigation measures and that mitigation measures implemented to meet the development requirements and DM policies in the 2016 MLP Consultation Draft should be sufficient to avoid any potential long term effects on health and wellbeing.

*SA Objective 2 (**Amenity**)*

5.10 Similar to SA objective 1, most of the Allocations have the potential to have a minor negative effect on SA objective 2, due to proximity of nearby sensitive receptors that may be affected by noise, dust, vibration etc. However, the extent of effects on local amenity will depend on the type of mineral extracted, the scale of the operations and the type of activities undertaken within the site. For example, noise and vibration may be greater near hard rock sites (e.g. crushed rock) due to the need for blasting prior to excavation, which is rarely needed at sand and gravel sites. Only one crushed rock Allocation (05: Preferred Area at Huntsmans (part of previous CRCW2 Parcel A)) and one sand and gravel Allocation (10: Areas of Search at Down Ampney and Charlham Farm (Previously SGCW6 Charlham Farm Parcel A) are expected to have no effect on SA objective 2, as they are further than 100m from sensitive receptors. It should be noted that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented to meet the development requirements and DM policies in the 2016 MLP Consultation Draft should be sufficient to avoid any potential long term amenity effects.

5.11 There are three Allocations which are not within 100m of a sensitive receptor but still have potential to have a minor negative effect on SA objective 2, as the sites are within 1km of a settlement and other existing mineral sites are also within 1km of the same settlement, therefore, continuing mineral extraction activity in the area could have a cumulative effect on the amenity of the local community. These are: Allocation 04 (Preferred Area at Daglingworth (previously CRCW1 Daglingworth Parcel A)) is more than 100m from sensitive receptors but is also within 1km of the settlements Itlay and Bagendon; Allocation 06 (Specific Site at Manor Farm, Kempsford), And Allocation 09 (Areas of Search at Land between Kempsford & Whelford (previously SGCW4 Kempsford/Whelford Parcels B, E and F)) which are not within 100m of sensitive receptors, but are within 1km of the settlements of either Kempsford or Whelford.

Economic Objectives

*SA Objective 3 (**Economic development**) and SA Objective 4 (**Employment**)*

5.12 All of the Allocations are likely to have negligible effects on SA objective 3 as they are unlikely to present opportunities for spin off employment or other opportunities (e.g. growth and investment in industries associated with aggregate sites such as haulage companies and engineers for processing plant machinery) as minerals sites are often self-served by the operators that own them. However, due to the likely job creation directly associated with new mineral extraction sites, all sites are likely to have minor positive effects on SA objective 4, irrespective of their location.

*SA Objective 5 (**Aerodrome safety**)*

5.13 All Allocations located within the Sand and Gravel Cotswold Water Park resource area have the potential to have minor negative effects on SA Objective 5, as the whole area lies within the RAF Fairford safeguarding zone. Therefore, minor negative effects may occur at sand and gravel Allocations 06, 08, 09 and 10 as they may be restored to open water where birds may congregate in large areas, and as the site options are within close proximity to RAF Fairford they may provide a hazard to aircraft due to the increased risk of bird-strike. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually implemented on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, sites may be restored to dry after uses due to being located within the RAF Fairford safeguarding zone. While this would be positive in terms of protecting the safety of the aerodromes, this could increase the risk of flooding as discussed under SA Objective 13 below.

5.14 All other Allocations for sand and gravel extraction in the Severn Vale and crushed rock extraction in the Forest of Dean and Cotswolds are expected to have no effect on SA objective 5, as they are not within an aerodrome safeguarding area.

*SA Objective 6 (**Conservation of mineral resources**)*

5.15 All Allocations are expected to have no effect on SA objective 6, as new potential mineral sites would not be classed as inappropriate development in terms of conserving mineral resources. The inappropriate development relates to other development types such as housing or employment, which could 'sterilise' the mineral resource from being extracted if developed on top of it.

Environmental Objectives

*SA Objective 7 (**Biodiversity**)*

5.16 Most of the Allocations have the potential to have either mixed minor negative and positive effects or no effects on SA objective 7, as they may be likely to impact on national or local nature conservation designations; however, if the minerals sites are enhanced through restoration they could make contributions to biodiversity enhancement and have positive effects on designated sites. However, this is uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. All of the Allocations except for 01: Preferred Area at Stowe Hill / Clearwell (Previously CRFD1 Stowe Hill/Clearwell Parcels A & B) are not likely to have significant effects on European designated sites. The 2016 HRA Report prepared by GCC[28] concluded after screening, that this was the only Allocation that might have minor residual effects alone (only in relation to the area previously referred to as Parcel B), and taking a precautionary approach some uncertainty remained, and therefore a consideration of in combination effects alongside other plans and projects was needed. The minor residual effects identified were in relation to potential impacts on bat habitat and flyways at CRFD1 which could be important to the well-being of the Wye Valley & Forest of Dean Bat Sites SAC (Old Bow & Old Ham Mines) which is at its nearest point about 750 metres away to the north east, and another another component part of the SAC (Devil's Chapel Scowles) 2.8km to the south east, plus the Wye Valley Woodlands SAC which is 1.8km away to the south west at its closest point. The main issue is whether horseshoe bats from or associated with the Wye Valley Woodlands or the Forest of Dean Bat Sites SAC may depend on what remains of a much degraded hedgerow network within Allocation 1. Following the review of other plans and projects,

[28] HRA Main Report for Gloucestershire MLP (Vers. 1.2 at Pre-Publication Stage), Gloucestershire County Council, 2016.

the 2016 HRA Report concluded that there is not likely to be a significant effect on the SACs in combination with the other relevant plans and projects, and therefore the Appropriate Assessment stage is not required.

5.17 Two of the Allocations (05: Preferred Area at Huntsmans (both parcels) and 09: Areas of Search at Land between Kempsford & Whelford (Previously SGCW4 Kempsford/Whelford Parcel B)) have the potential to have minor positive effects on SA objective 7, because they are not within close proximity of any designated nature conservation sites, and there is the potential to provide particular biodiversity enhancement through restoration.

5.18 The detailed development requirements in each Allocation in Appendix 6 of the Draft MLP specify the need for an analysis of potential impacts on the natural environment, with reference to particular relevant nearby nature conservation sites. The analysis will also need to investigate impacts on priority habitats and species which have been adjacent or near to the site. The detailed development requirements also specify that restoration plans should be explored, along with opportunities to achieve biodiversity enhancements. This should help provide mitigation for the potential negative effects identified.

*SA Objective 8 (**Landscape**)*

5.19 **Four of the Allocations** have the potential to have a **significant negative effect** on SA objective 8, as the landscape assessment carried out by Atkins (June 2015) for each site judged that there would be a 'significant Moderate Adverse' or 'significant Major Adverse' impact on the landscape character and/or local landscape features. These were: Allocation 01 (Preferred Area at Stowe Hill / Clearwell); Allocation 07 (Preferred Area at Redpool's Farm, Twyning); and Allocation 10 (Areas of Search at Down Ampney and Charlham Farm).

5.20 Two of the Allocations (02: Preferred Area at Drybrook and 05: Preferred Area at Huntsmans (part of previous CRCW2 Huntsmans Parcel A)) were identified as having a minor negative effect on this objective because they were judged as having 'minor' or 'moderate/minor' landscape impacts in the Atkins Landscape Report.

5.21 The eight remaining Allocations (or parcels within them) were judged in the Atkins landscape assessments as unlikely to have an effect on landscape character or features, and therefore would have no effect on SA objective 8.

5.22 The detailed development requirements for each Allocation in Appendix 6 of the Draft MLP specify the need for a Landscape & Visual Impact Assessment once proposals come forward, which should help to inform mitigation measures to reduce the potential significant effects identified.

*SA Objective 9 (**Mineral site restoration**)*

5.23 All site options irrespective of their location are expected to have a minor positive effect on SA objective 9, as the restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this is uncertain as it will depend on the specific restoration proposals put forward at the planning application stage.

*SA Objective 10 (**Material, cultural and recreational assets**)*

5.24 Most of the Allocations have the potential for minor negative effects on SA objective 10, as Public Rights of way (PRoW) are either within 250m of the sites or run through areas of the sites and the GCC PRoW Team have identified that diversions would be required. However, Allocation 06 (Specific Site at **Manor Farm**) has the potential to have **significant negative effects** on SA objective 10, as the site includes the PRoW footpaths BKD 27/1, 28/1, 28/2, 34/1 and 34/2 that make a network through the centre of the site. The GCC PRoW Team has identified that a diversion would be required for these footpaths and that the area is sensitive in terms of rights of way due to the temporary closure of some paths to allow development of lakeside properties. need to be temporarily closed while they are diverted. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP outlines the need for an assessment of the PRoW network, with particular focus on BKD 19/1, 19/2, 27/1, 28/1, 34/1, 34/2. Advice should also be sought from the Local Highways Authority regarding any proposals to temporarily divert or permanently re-route of any the potentially affected paths.

5.25 None of the Allocations are expected to affect other leisure or recreational facilities or open space, including cycle routes, due to their location in relation to these assets.

*SA Objective 11 (**Geodiversity**)*

5.26 Allocation 02 (Drybrook) and all of Allocations 06-10 in the Sand and Gravel Cotswold Water Park resource area are expected to have no effect on SA objective 11 as they are more than 500m from a national site of geological interest (SSSI) or Regionally Important Geological Site (RIGS)[29], except for Allocation 09 (Areas of Search at Land between Kempsford & Whelford (previously SGCW4 Kempsford/Whelford Parcel B)) which has the potential to have a minor negative effect as it is within 500m of a national site of geological interest (SSSI) or RIGS. In these sites, there is the potential to damage or remove the geological interest through excavation practices.

5.27 Allocations 01 (Stowe Hill), 04 (Daglingworth) and 05 (Huntsmans) could also have a minor negative effect on SA objective 11, as they are within 500m of a SSSI of geological interest or RIGS. However, Allocation 03 (**Stowfield**) could have a **significant negative effect** as the Preferred Area is located within the existing consented Stowfield Quarry which is designated as a Regionally Important Geological Site.

5.28 **It is recommended that the detailed development requirements for this Allocation include reference to protecting the Stowfield Quarry RIGS (the 2014 GCC assessment for the site recommended that that if quarrying is extended, or any infilling takes place, one rock face along the complete E-W section of the existing consented quarry is preserved, with an access ramp or path along it).**

*SA Objective 12 (**Historic environment and heritage assets**)*

5.29 All of the Allocations have the potential to have a minor negative effect on SA Objective 12, as they are within 1km of a Historic Park or Garden or Registered Battlefield, Scheduled Ancient Monument or Listed Building, or a Conservation Area, and minerals extraction sites could potentially affect the setting of these heritage assets. However, two of the Allocations (01 (**Stowe Hill**) and 04 (**Daglingworth**) could have **significant negative effects** on SA objective 12. The Atkins landscape assessment concluded for Allocation 01 that development of this site would result in a localised and significant Major Adverse impact on the setting of the Toll House Grade II Listed Building to the east of Parcel B. Allocation 04 is not likely to have significant effects on the historic landscape character or particular local designated heritage assets, however, the GCC site assessment 2016 identifies the site of a possible Bronze Age barrow, and an earthwork bordering the south eastern boundary of the site which forms a part of the late Iron Age-early Roman settlement of Bagendon. The latter is of national importance and parts of the complex are a scheduled monument. The possible presence of other features contemporary with Bagendon was also raised by GCC, and recommended that the linear earthwork was excluded from the extraction area, and that the rest of the site should be assessed/evaluated. Therefore, the site could have a significant negative effect on archaeology, however, the effects would be uncertain as a more detailed assessment would be required once proposals are known.

5.30 The detailed development requirements for these Allocations in Appendix 6 of the Draft MLP specify the need for an assessment of heritage assets for the Preferred Area, and for Allocation 04, one that incorporates an analysis of its potential archaeological interest. Assessments must include both a pre-determination evaluation to establish the presence and significance of heritage assets; and a mitigation strategy that could introduce constraints upon future mineral working and associated activities in order to preserve key heritage assets and their settings; and the appropriate and proportionate recording and / or excavation of all other heritage assets.

*SA Objective 13 (**Flooding**)*

5.31 The hydrogeological assessments carried out by Atkins for all of the Allocations found that there could be a significant impact on flood risk from all of the Allocations. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After

[29] While the government has proposed to change the name of Regionally Important Geological Sites (RIGS) to Local Geological Sites; in Gloucestershire they are still referred to as RIGS.

restoration the use of lower permeability materials may cause rainwater events to increase risk of flooding. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. However, the Atkins reports conclude that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. Therefore, a minor negative effect is identified on this SA objective for all ten Allocations. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed.

5.32 The detailed development requirements for the Allocations in Appendix 6 of the Draft MLP outline the need for a Flood Risk Assessment with reference to particular aspects that need to be considered relevant to each Allocation.

*SA Objective 14 (**Soil / land quality**)*

5.33 The majority of the Allocations could have minor negative effects on SA objective 14, as they are large (i.e. over 20ha) and partially within grade 1, 2 or 3 agricultural land, or are small to medium (i.e. less than 20ha) and entirely within grade 1, 2 or 3 agricultural land. In both of these situations, mineral extraction at the site could result in the loss of high quality agricultural land. However, Allocation 06 (Specific site at **Manor Farm**), Allocation 09 (Areas of Search at **Land between Kempsford & Whelford** (previously SGCW4 Kempsford/Whelford Parcels E and F)) and Allocation 10 (Areas of Search at **Down Ampney and Charlham Farm**) could have **significant negative effects** on SA objective 14 as the sites are large (i.e. over 20ha) and located entirely within grade 1, 2 or 3 agricultural land, and could therefore result in the loss of large areas of high quality agricultural land.

5.34 All of these effects are uncertain however, as there may be opportunities to redress the loss of agricultural land during restoration. This is uncertain because it will depend on the specific restoration proposals put forward which will not be known until the planning application stage.

5.35 A soil impact assessment is outlined in the detailed development requirements for these Allocations in Appendix 6 of the Draft MLP due to the presence of agricultural land of high grade.

*SA Objective 15 (**Air Quality**)*

5.36 The majority of the Allocations could have minor negative impacts on SA Objective 15, as they are more than 1km from the strategic highway network, and it is assumed that HGV traffic associated with the sites is therefore likely to travel further along local roads before reaching the strategic highway network. Only Allocations 03, 04, 07 and 08 are expected to have no impact on SA objective 15 as they are all are within 1km of the strategic highway network, and therefore HGVs are likely to spend less time on local roads.

*SA Objective 16 (**Water quality and quantity**)*

5.37 All of the Allocations have the potential for minor negative effects on water quality and/or quantity, based on the conclusions of the hydrogeological impact assessments carried out by Atkins. This was due to generally significant impacts being identified from either de-watering and diversion of groundwater away from the areas of the principal aquifer and secondary A aquifer, leading to a decrease in water quality, or potential decreases in water quality impacting particular surface water bodies including Local Wildlife Sites and SSSIs. The potential for changes in water quality identified in the Atkins reports are due to possible increases in suspended sediments during operation. De-watering during operation can also result in diversion of water from water bodies as groundwater flow paths are interrupted. After restoration, where sites are likely to be partially backfilled, this would increase overland flow.

5.38 Although the Atkins reports conclude that there could be a number of significant impacts on water quality from mineral extraction at the potential sites, there is an explanation of the measures that would be included to reduce these impacts, and a conclusion is reached regarding residual effects which are generally negligible for most of the sites. Therefore, it is assumed that the potential significant effects identified in the Atkins reports are very unlikely to occur, and only minor negative effects on water quality have been identified, with uncertainty attached to the effects as they will depend on the detailed proposal for the site and any mitigation measures included, which would be assessed at the planning application stage.

5.39 The detailed development requirements for each Allocation in Appendix 6 of the MLP require further hydrogeological impact assessments to be completed, which will consider potential risks, their significance and possible mitigation measures, if required, on the nearby surface water bodies up to 1km, plus review the underlying geology to identify the presence of a designated aquifer. In preparing any hydrological mitigation, attention should be given to reducing the impact of any dewatering that may be proposed through sub-dividing the working area into smaller cells to reduce the active perimeter; and restricting the practice during storm events to ensure receiving waters have appropriate capacity for the flow. For minimising the risk to water quality, bunded tanks and drip trays to prevent spillages should be proposed, along with settlement (silt) ponds or proprietary equipment.

*SA Objective 17 (**Lorry traffic**)*

5.40 The majority of Allocations are located more than 1km from the strategic highway network and as traffic associated with the sites is assumed likely to travel further along local roads, minor negative effects are expected on reducing the impacts of lorry traffic on the environment and communities for SA objective 17. However, these effects are uncertain for a large proportion of the site options as they have the potential lead to positive or negative effects on the amenity of local communities due to reducing or increasing the effects of lorry traffic. For example, extensions to some sites may provide opportunities for new highway access which would enable lorries to reach the strategic road network with less impact on communities, thereby reducing lorry traffic on existing local roads. Alternatively, due to the location of some site options, GCC Highways has major concerns in relation to highways access, due to the width and alignment of the local road network. However, this is uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage.

5.41 Conversely, Allocations 03 (Stowfield) and 04 (Daglingworth) are within 1km of the strategic highway network and could therefore have minor positive effects on reducing the impacts of lorry traffic on the environment and communities for SA objective 17. Two Allocations 07 (Redpools) and 08 (Lady Lamb Farm) have the potential to have mixed effects as while the sites are within close proximity to the strategic road network they are not associated with any current mineral operations and the suitability of and the mitigation for the road network would need to be determined, and safe and suitable access would be required. Again, effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage.

SA Objective 18 (**Climate change***)*

5.42 At this stage in the planning process it is not possible to determine the impacts of minerals site Allocations on their ability to reduce contributions to adapt to climate change as it will depend on the specific proposals for how minerals will be extracted, which would be assessed at the planning application stage.

Table 5.7: Summary of SA scores for the ten Allocations (including individual parcels where relevant)

Allocation	01	02	03	04	05		06	07	08	09			10	
Previous Parcel	CRFD1 A+B	CRFD2 A	CRFD3 C	CRCW1 A	CRCW2 A	CRCW2 C	SGCW4 C	SGTW2 A-D	SGCW3 A	SGCW4 B	SGCW4 E	SGCW4 F	SGCW6 A	SGCW5 A-C
Social objectives														
1. Health and wellbeing.	-?	-?	0	0	0	-?	0	-?	-?	0	-?	-?	0	-?
2. Amenity of local communities.	-	-	-	-	0	-	-?	-	-?	-?	-	-	0	-
Economic objectives														
3. Sustainable economic development.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. Employment opportunities.	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5. Safety of commercial or military aerodromes.	0	0	0	0	0	0	-?	0	-?	-?	-?	-?	-?	-?
6. Conservation of minerals resources.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Environmental objectives														
7. Biodiversity.	-/+?	0	-/+?	-/+?	+	+?	-/+?	-/+?	0?	+?	-/+?	-/+?	-/+?	-/+?
8. Landscape.	--?	-?	0	0	-?	0	0	--?	0	0	0	0	--?	--?
9. Restoration of mineral	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?

Allocation	01	02	03	04	05		06	07	08	09			10	
Previous Parcel	CRFD1 A+B	CRFD2 A	CRFD3 C	CRCW1 A	CRCW2 A	CRCW2 C	SGCW4 C	SGTW2 A-D	SGCW3 A	SGCW4 B	SGCW4 E	SGCW4 F	SGCW6 A	SGCW5 A-C
sites.														
10. Material, cultural and recreational assets.	-	-	0	-	0	-?	--?	-	-	-	-	-	-	-
11. Geodiversity.	-?	0	--?	-?	-?	-?	0	0	0	-?	0	0	0	0
12. Historic environment.	--?	-?	-?	--?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
13. Flooding.	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
14. Soil / land quality.	-?	-?	0	-?	-?	-?	--??	-?	-?	-?	--??	--??	--??	--??
15. Air quality.	-	-	0	0	-	-	-	0	0	-	-	-	-	-
16. Water quality and quantity.	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
17. Impacts of lorry traffic.	-?	-?	+?	+?	-	-	-?	+/-?	+/-?	-?	-?	-?	-?	-
18. Climate Change.	?	?	?	?	?	?	?	?	?	?	?	?	?	?

Summary of SA Effects of MLP Consultation Draft (September 2016)

5.43 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).

5.44 Gloucestershire's MLP Consultation Draft (September 2016) sets out how the future minerals development of the County should develop and operate and how the minerals needs of Gloucestershire and the markets it supplies will be met up to 2033. Therefore, this means that the timescales for effects resulting from policies within the MLP Consultation Draft (September 2016) could be at least 15 years. In reality, some of the policies may have short-term effects (defined for this SA as over the next 5 years), medium-term effects (defined as over the next 10 years), or long-term effects (defined as over the whole plan period). In many instances, given the generic nature of the policies in the MLP Consultation Draft (September 2016), 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.

5.45 However, it is possible to draw some broad conclusions about the nature and interrelationship of the effects that the SA has identified:

- Most of the effects will be long-term, in that the MLP Consultation Draft (September 2016) aims to provide minerals that will last over time. There will inevitably be some temporary and short or medium term effects during the construction or operation of facilities (see below).
- The effects which have been identified in the appraisal of the MLP Consultation Draft (September 2016), both positive and negative, are likely to increase over time, as the policies in the MLP Consultation Draft (September 2016) are implemented, and more minerals development is delivered in Gloucestershire, although some operations may be completed as new excavation sites are developed so some effects may balance out.

Short-term effects of the MLP Consultation Draft (September 2016)

5.46 The impacts of the MLP Consultation Draft (September 2016) in the short-term are mostly related to the initial impacts of commencing minerals extraction. This will include the removal of vegetation, top soil, sub soil, and provision of infrastructure required. Such works could have negative impacts on biodiversity, health and wellbeing, amenity of local communities (possible disruption to rights of way, traffic flows, noise generation, vibration, dust etc.), soil quality, and the landscape. However, these impacts are temporary in nature and some may be minimised through good design, adherence to the policies in the MLP or reversed through restoration measures in the medium to long-term.

Medium-term effects of the MLP Consultation Draft (September 2016)

5.47 Medium-term positive impacts relate to the employment and economic benefits of the minerals sites. Negative impacts in the medium-term include the implications of operational minerals extraction sites on health and wellbeing, and the amenity of local communities (e.g. noise, dust, increased traffic etc.). However, as discussed previously in this chapter, these impacts should be avoided or mitigated through good practices by the minerals operators, and adherence to all the policies in the MLP when planning proposals are assessed and determined by GCC.

Long-term effects of the MLP Consultation Draft (September 2016)

5.48 Long-term, permanent benefits that would result from the MLP Consultation Draft (September 2016) include the provision of sufficient minerals operations to meet Gloucestershire's needs, potential flood alleviation (e.g. sand and gravel sites in the Cotswolds Water Park resource area), habitat creation and biodiversity enhancement opportunities through the restoration of minerals working sites, or the incorporation and preservation of important geological features within sites. Long-term, permanent negative impacts of the MLP Consultation Draft (September 2016) policies are potentially: loss of habitats, areas of best and most versatile agricultural land; climate change implications of the energy required to operate facilities and vehicle movements to minerals; and

the disturbance and/or removal of archaeological remains, some of which may be of national significance. However, there may also be some long-term, permanent positive impacts for biodiversity and landscape through the creation of new habitats, and enhancement of landscape through well designed and implemented restoration of minerals sites; and long term, permanent positive impacts for the historic environment as sites may benefit our understanding of the local archaeology which is found during minerals operations, and aggregates and building stone, for example, could also make a positive contribution towards local vernacular.

Significant effects of the MLP Consultation Draft (September 2016)

5.49 As previously discussed in this Chapter a range of significant effects, both positive and negative, are expected as a result of the MLP Consultation Draft (September 2016). The relevant elements of the MLP Consultation Draft (September 2016) that have the potential to have significant effects on the SA objectives are summarised in **Tables 5.8 and 5.9** below. Potentially significant positive effects (**Table 5.8**) have been identified for all of the SA objectives from at least one of either the Vision, MLP Objectives or Policies. Potentially significant negative effects (**Table 5.9**) have only been identified in relation to some of the Allocations, but none of the proposed policies.

Table 5.11: Likely significant positive effects of the MLP Consultation Draft (September 2016)

SA Objective	MLP Consultation Draft (September –016) - Vision, Objectives, Policies, Allocations
Social SA Objectives	
1. Health and wellbeing	• Policy MS02: Non-minerals development within MCAs
2. Amenity of local communities	• Policy MS02: Non-minerals development within MCAs • Policy DM01: Amenity
Economic SA Objectives	
3. Sustainable economic development	• Vision • Objective 3: Provision & Supply (PS)
4. Employment opportunities	• Vision • Objective 3: Provision & Supply (PS)
5. Safety of commercial or military aerodromes	• Policy DM11: Aerodrome safeguarding & Aviation Safety
6. Conservation of minerals resources	• Objective 1: Reuse & Recycling (SR) • Objective 2: Resource Manage-ment (RM) • Policy SR01: Maximising the use of secondary and recycled aggregates • Policy MS01:Non-minerals development within MSAs • Policy MS02: Non-minerals development within MCAs • Policy MS03: Safeguarding mineral infrastructure
Environmental SA Objectives	
7. Biodiversity	• Vision • Objective 4: The Environment (ENV) • Policy DM06 | Biodiversity and Geodiversity
8. Landscape	• Vision • Objective 4: The Environment (ENV) • Policy DM09 | Landscape
9. Restoration of mineral sites	• Vision • Objective 6: Restoration (RA) • Policy MR01: Restoration aftercare and facilitating beneficial after-uses
10. Material, cultural and recreational assets	• N/A

SA Objective	MLP Consultation Draft (September –016) - Vision, Objectives, Policies, Allocations
11. Geodiversity	• Vision • Objective 4: The Environment (ENV) • Policy MS01: Non-minerals development within MSAs • Policy DM06 | Biodiversity and Geo-diversity
12. Historic environment, heritage assets and their setting	• Policy MW02: Natural Building Stone (as part of a mixed effect) • Policy DM08: Historic Environment
13. Flooding	• Vision • Policy DM04: Flood Risk
14. Soil / land quality	• Policy DM07: Soils
15. Air quality	• Policy DM03: Transport
16. Water quality and quantity	• Vision • Policy DM05: Water Environment
17. Impacts of lorry traffic on the environment and communities	• Policy DM03: Transport

Table 5.12: Likely significant negative effects of the MLP Consultation Document (June 2014)

SA Objective	MLP Consultation Draft (September –016) - Vision, Objectives, Policies, Allocations
Environmental SA Objectives	
8. Landscape	• Allocation 01 – Preferred Area at Stowe Hill / Clearwell • –Allocation 07: Preferred Area at Redpool's Farm, Twyning • Allocati–n 10 - Areas of Search at Down Ampney and Charlham Farm (previously SGCW6 Charlham Farm Parcel Aand SGCW5 Down Ampney Parcels A, B & C)
10. Material, cultural and recreational assets	• Allocati–n 06 - Specific Site at Manor Farm, Kempsford
11. Geodiversity	• Allocation 03 – Preferred Area at Stowfield
12. Historic environment, heritage assets and their setting	• Allocation 01 – Preferred Area at Stowe Hill / Clearwell • Allocation 04 – Preferred Area at Daglingworth
14. Soil / land quality	• Allocati–n 06 - Specific Site at Manor Farm, Kempsford • Allocation 09 – Areas of Search at Land between Kempsford & Whelford (previously SGCW4 Kempsford/Whelford Parcels E & F). • Allocati–n 10 - Areas of Search at Down Ampney and Charlham Farm

Cumulative effects of the MLP Consultation Draft (September 2016)

5.50 Looking at the summary tables of SA scores above enables a judgement to be made regarding the overall cumulative effects of the MLP Consultation Draft (September 2016) on each SA objective.

Social SA Objectives

5.51 A cumulative mixed, minor positive/minor negative effect on SA objectives 1 (Health and wellbeing) and 2 (Amenity of local communities) is likely to result from the MLP Consultation Draft

. While a number of the Allocations are likely to have minor negative effects on the SA objectives many of them are uncertain, and many of the policies are likely to have minor positive effects, negligible effects or even no effects on these SA objectives.

Economic SA Objectives

5.52 The MLP Consultation Draft mainly has either minor positive or no effects on SA Objective 3 (Economic Development), therefore cumulatively it is likely that minor positive effects will occur on this SA objective. Similarly, policies are likely to have either minor positive or no effects on SA Objective 4 (Employment), although all Allocations are also expected to have minor positive effects on this SA objective. Therefore, cumulative effects on SA objective 4 are considered likely to be minor positive.

5.53 All Allocations in the Sand and Gravel Costwold Water Park resource area are likely to have minor negative effects on SA objective 5 (Aerodrome Safety), however, these are all uncertain as it is dependent on the type of restoration proposed and eventually implemented on a site. All other sites are expected to have no effect on SA objective 5. The MLP Consultation Draft policies that are likely to have effects on SA objective 5, which is not many, are likely to be either minor negative or minor positive. Therefore, cumulative effects on SA objective 5 are considered to be minor negative.

5.54 A cumulative significant positive effect on SA objective 6 (Conservation of mineral resources) is likely to result from the MLP Consultation Draft , as the policies that are likely to affect this SA objective are expected to either have significant positive or minor positive effects.

Environmental SA Objectives

5.55 The MLP Consultation Draft mainly has either positive effects or mixed, minor positive/minor negative effects on SA objective 7 (Biodiversity), many of which are uncertain. Therefore, cumulative effects on SA objective 7 are considered to be mixed, minor positive/minor negative.

5.56 All Allocations are expected to have minor positive effects on SA objective 9 (Mineral site restoration). Similarly, most policies in the MLP Consultation Draft are also expected to have positive effects on SA objective 9, in some cases significant effects. Therefore, overall minor positive effects are likely for SA objective 9.

5.57 Cumulative mixed, minor positive/minor negative effects are expected for many of the Environmental SA objectives (SA objectives 10, 11, 12, 14, 15 and 17). While a number of Allocations are expected to have minor negative effects, and even significant negative effects on these SA objectives (e.g. SA objective 10 – Cultural/recreational assets, 11 – Geodiversity, 12 – Historic Environment and SA objective 14 – Soil / land quality); many of the MLP Consultation Draft proposed policies are expected to have positive effects, in some cases significant, on the SA objectives (e.g. SA objective 11 – Geodiversity, SA objective 12 – Historic environment and heritage assets and SA objective 14 – Soil/land quality) or mixed, minor positive/minor negative effects.

5.58 Four of the Allocations could have significant negative effects on SA objective 8 (Landscape) and two of the Allocations could have minor negative effects, the remaining eight Allocations are unlikely to affect landscape character (although they may have some specific visual impacts on nearby properties). However, many of the MLP Consultation Draft policies are likely to have either minor positive or mixed minor negative/minor positive effects on SA objective 8, and should help to avoid the negative effects occurring if Allocation sites are developed. Therefore, overall, cumulative mixed, minor negative/minor positive effects on SA objective 8 (Landscape) are likely to result from the MLP Consultation Draft .

5.59 All of the Allocations have the potential to have minor negative effects on SA objective 13 (Flooding) and most of the Allocations could also have a minor negative effect on SA objective 16 (Water quality and quantity). However, many of the MLP Consultation Draft policies are likely to have either minor positive or mixed no effect/minor positive effects on SA objective 13, and should help to avoid the potential negative effects occurring if Allocation sites are developed. Therefore, overall, cumulative mixed, no effect/minor negative effects on SA objectives 13 (Flooding) and 16 (Water quality and quantity) are likely to result from the MLP Consultation Draft .

5.60 Cumulatively, the MLP Consultation Draft , is likely to have minor positive effects on SA objective 18 (Climate change). While some policies in the MLP Consultation Draft are expected to have minor positive effects on these SA objectives, at this stage in the planning process is not possible to determine the impacts of the minerals sites or some policies on these SA objectives as it will depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.

6 Monitoring

6.1 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 1 (i)). 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.

6.2 Monitoring should be focused 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 or mitigation measures to be taken.

6.3 As discussed in **Chapter 5** and shown in **Tables 5.** and **5.9**, a number of the policies and site options included in the MLP Consultation Draft (September 2016) could have potential significant positive or negative effects on the SA objectives. Therefore, it is recommended that monitoring is undertaken to determine whether these effects do indeed occur due to implementation of the MLP, and in order to seek to remedy or reverse them.

6.4 **Table 6.1** sets out a number of suggested indicators for monitoring the potential effects of implementing the MLP. In order to make best use of existing monitoring arrangements, a number of indicators have been drawn from Gloucestershire's Minerals and Waste Authority Monitoring Report–2011 - 2012[30] (shown in *italic* text), as well as Section 12 in the MLP Consultation Draft (September 2016). Therefore, the indicators included in **Table 6.1** may change at subsequent stages of the MLP preparation as GCC finalises its monitoring framework.

Table 6.1: Suggested framework for monitoring potential significant sustainability effects arising from implementation of the Gloucestershire MLP Consultation Draft (September 2016)

SA objectives for which potential significant effects have been identified	**Policies and Allocations that are likely to lead significant effects**	**Proposed indicators** (from Gloucestershire's Minerals and Waste Authority Monitoring Report and 2016 MLP Consultation Draft)
Social SA Objectives		
1. Health and wellbeing	• Policy MS02: Non-minerals development within MCAs	*The number and % of all permitted minerals applications that were for operational 'improvements' to existing sites that would reduce the risk to public health.* *The number and % of all minerals refusals where concerns over public health acted as part of the reason for refusal.* Planning applications for minerals development being permitted where amenity issues were relevant and underwent scrutiny.
2. Amenity of local communities	• Policy MS02: Non-minerals development within MCAs • Policy DM01: Amenity	*The number and % of minerals permissions, which include conditions relating to: Noise, hours of operations,*

[30] Available at: http://www.gloucestershire.gov.uk/extra/CHttpHandler.ashx?id=55902&p=0 (Note that although a new Authority Monitoring Report was published covering the period April 2012 to December 2013, this uses the same indicators as the previous report. The newer report is available at http://www.gloucestershire.gov.uk/extra/CHttpHandler.ashx?id=62599&p=0).

SA objectives for which potential significant effects have been identified	Policies and Allocations that are likely to lead significant effects	**Proposed indicators** (from Gloucestershire's Minerals and Waste Authority Monitoring Report and 2016 MLP Consultation Draft)
		traffic and lighting. *The number and % of minerals refusals where amenity was cited within the reason for refusal.* Planning applications for minerals development being permitted where amenity issues were relevant and underwent scrutiny.
Economic SA Objectives		
3. Sustainable economic development	• Vision • Objective 3: Provision & Supply (PS)	*Annual production of minerals.* *Permitted reserves of minerals.* *Amount/% of minerals consumed locally/imported per year by type.*
4. Employment opportunities	• Vision • Objective 3: Provision & Supply (PS)	*Number of new minerals developments permitted during the monitoring period. 'New' in this context only relates to brand new facilities and does not include extended, expanded or revised minerals operations.* *Employment in the Minerals sector in Gloucestershire.*
5. Safety of commercial or military aerodromes	• Policy DM11: Aerodrome safeguarding & Aviation Safety	*Number of minerals developments permitted within aerodrome safeguarding areas.* Planning applications for minerals development being permitted where aerodrome safeguarding and / or aviation safety issues were relevant and underwent scrutiny.y
6. Conservation of minerals resources	• Objective 1: Reuse & Recycling (SR) • Objective 2: Resource Manage-ment (RM) • Policy SR01: Maximising the use of secondary and recycled aggregates • Policy MS01:Non-minerals development within MSAs • Policy MS02: Non-minerals development within MCAs • Policy MS03: Safeguarding mineral infrastructure	*The number and % of minerals developments permitted upon existing sites or Preferred Areas identified within the Minerals Plan.* *The number of non-minerals developments permitted upon Preferred Areas identified within the adopted Minerals Local Plan.* *Number of non-mineral applications determined for sites within Mineral Safeguarding Areas, which required a minerals consultation.*
Environmental SA Objectives		
7. Biodiversity	• Vision • Objective 4: The Environment (ENV) Policy DM06: Biodiversity and Geodiversity	*The number of minerals proposals determined upon international, national and local environmental designations.* *The number and % of minerals and refusals where environmental matters such as designated sites, were cited in the refusal reasons.* *The number and % of all permitted minerals applications that included conditions related to ecology and biodiversity.*

SA objectives for which potential significant effects have been identified	Policies and Allocations that are likely to lead significant effects	**Proposed indicators** (from Gloucestershire's Minerals and Waste Authority Monitoring Report and 2016 MLP Consultation Draft)
		Planning applications for minerals development being permitted where biodiversity issues were relevant and underwent scrutiny.
8. Landscape	• Vision • Objective 4: The Environment (ENV) • Policy DM09: Landscape • Allocation 01 – Preferred Area at Stowe Hill / Clearwell • Allocation 07: Preferred Area at Redpool's Farm, Twyning Allocation 10 - Areas of Search at Down Ampney and Charlham Farm	*The number of minerals proposals determined upon international, national and local environmental designations.* *The number and % of minerals refusals where environmental matters such as landscape or designated sites, were cited in the refusal reasons.* Planning applications for minerals development being permitted where historic environment issues were relevant and underwent scrutiny.
9. Restoration of mineral sites	• Vision • Objective 6: Restoration (RA) • Policy MR01: Restoration aftercare and facilitating beneficial after-uses	*The number and % of mineral permissions that include conditions concerning the delivery of mineral restoration schemes.*
10. Material, cultural and recreational assets	• Allocation 06 - Specific Site at Manor Farm, Kempsford	*The number and % of mineral permissions proposing the loss of material, cultural and recreational assets.*
11. Geodiversity	• Vision • Objective 4: The Environment (ENV) • Policy MS01: Non-minerals development within MSAs • Policy DM06: Biodiversity and Geo-diversity • Allocation 03 – Preferred Area at Stowfield	*The number of minerals proposals determined designations e.g. RIGS.* Planning applications for minerals development being permitted where geo-diversity issues were relevant and underwent scrutiny.
12. Historic environment, heritage assets and their setting	• Policy MW02: Natural Building Stone (as part of a mixed effect) • Policy DM08: Historic Environment • Allocation 01 – Preferred Area at Stowe Hill / Clearwell • Allocation 04 – Preferred Area at Daglingworth	*The number and % of all permitted minerals applications that included conditions related to archaeology.* *Number and % of Listed Buildings and Scheduled Ancient Monuments on Buildings at Risk Register (English Heritage)* *The need for, frequency and outcomes of planning enforcement investigations/ planning appeals concerning aspects of the historic environment, such as damage or pollution affecting the historic environment, or the loss of locally important buildings within a conservation area.* Planning applications for minerals development being permitted where historic environment issues were relevant and underwent scrutiny.
13. Flooding	• Vision	*The number and % of minerals permissions located upon designated*

SA objectives for which potential significant effects have been identified	Policies and Allocations that are likely to lead significant effects	**Proposed indicators** (from Gloucestershire's Minerals and Waste Authority Monitoring Report and 2016 MLP Consultation Draft)
	• Policy DM04: Flood Risk	*floodplain land.* *The number and % of minerals refusals where the floodplain acted as part of the reason for the refusal.* Planning applications for minerals development being permitted where flood risk issues were relevant and underwent scrutiny.
14. Soil / land quality	• Policy DM07: Soils • Allocation 06 - Specific Site at Manor Farm, Kempsford • Allocation 09 – Areas of Search at Land between Kempsford & Whelford (previously SGCW4 Kempsford/Whelford Parcels E & F). • Allocation 10 - Areas of Search at Down Ampney and Charlham Farm	*The number and % of all minerals refusals where environmental protection acted as part of the reason for refusal.* Planning applications for minerals development being permitted where soil resources issues were relevant and underwent scrutiny.
15. Air quality	• Policy DM03: Transport	*The number and % of minerals approvals that included conditions concerning air pollution control.* *The number and % of all minerals refusals where environmental protection acted as part of the reason for refusal.*
16. Water quality and quantity	• Vision • Policy DM05: Water Environment	*The number and % of minerals refusals where safeguarding water supplies acted as part of the reason for the refusal.* *The number and % of minerals approvals that included conditions concerning water pollution control.* *The number and % of all minerals refusals where environmental protection acted as part of the reason for refusal.* Planning applications for minerals development being permitted where water environment issues were relevant and underwent scrutiny.
17. Impacts of lorry traffic on the environment and communities	• Policy DM03: Transport	*The number and % of minerals permissions that included one or more of the following highway conditions: Restricted vehicle numbers; Restricted tonnages; Restricted routings; and Highway mitigation measures – the need for wheel washing, lorry sheeting etc.* *The number and % of all minerals refusals, where highways was cited as part of the reason for refusal.* Planning applications for minerals development being permitted where transport issues were relevant and underwent scrutiny.

7 Conclusions

7.1 The policies and site allocations in the MLP Consultation Draft (September 2016) have been subject to a detailed appraisal against the SA objectives which were developed at the scoping stage of the SA process.

7.2 The MLP Consultation Draft provides well-reasoned proposed policies and a clear guide to minerals development based on sound sustainable development principles. In general, the MLP Consultation Draft has been found to have a wide range of positive and significant positive effects on the SA objectives, although a few significant negative and a number of minor negative effects have also been identified (mainly in relation to the allocation of particular sites for crushed rock or sand and gravel extraction). The severity of these impacts will depend very much on the exact location of the proposed development, its proximity to sensitive receptors, and its nature and scale, which may not be known until the planning application stage. Site allocations have been identified for minerals development through a comprehensive site selection methodology undertaken by the Council including additional technical assessments for hydrogeological and landscape impacts, as well as Habitats Regulations Assessment. Through this processthe Council has sought to minimise the potential sustainability effects of minerals development in Gloucestershire. In addition, when the MLP Consultation Draft is considered as a whole, and alongside the other documents in the MWDP, the SA team consider that all of the policies will work together to reduce the negative effects of minerals development.

7.3 We have inevitably had to make assumptions in coming to judgements of the effects of the MLP Consultation Draft . Our assumption with respect to effects, cumulative or otherwise, is on the basis of the intention of the MLP Consultation Draft (i.e. what it is trying to achieve. Past experience suggests that, when considering development proposals, there will often be tensions when applying different policies, and deciding where 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 and good practice guidance, and difficult choices will often have to be made.

Appendix 1

Summary of consultation responses received during the Gloucestershire Minerals Local Plan SA Scoping Report consultation (March – May 2013) and the Site Options and Draft Policy Framework consultation (June – August 2014) and the Additional Site consultation (February – March 2015)

Summary of consultation responses received during the Gloucestershire Minerals Local Plan SA Scoping Report consultation (March-May 2013)

Respondent	Section	Comment	How/where consultation comments have been addressed	
			SA Scoping Report – Update 4 (July 2013)	Gloucestershire MLP Consultation Document (June 2014)SA
Tewkesbury Borough Council (BC)	Pg.9 & pg.96	Reference should be to the 'Tewkesbury Borough Local Plan to 2011', which comprises the extant development plan policies for the borough until replaced by the Joint Core Strategy (JCS) (anticipated adoption 2014) and the Tewkesbury Borough Plan (anticipated adoption 2015). The latter is intended to sit beneath the strategic JCS to cover non-strategic issues of local importance in the borough. A similar hierarchy of plans is also being pursued by Cheltenham and Gloucester.	Table 1, Section 5. Appendix 2.	Table 3.1, Chapter 3. Appendix 3.
Tewkesbury BC	Section 5	Reference should be made to the emerging JCS (for Gloucester, Cheltenham and Tewkesbury) rather than to 'local development frameworks'. The evidence on housing numbers referred to in the assessment of housing needs will be of use in preparing your baseline evidence, although these are still subject to agreement by the three councils. The JCS production timeframe is fairly dynamic with the latest schedule set out on the JCS website. The sustainability appraisal work for the JCS is on-going but you may find some of the objectives and indicators of use. Further updating will take place with regards the preferred options consultation in July/Aug 2013.	Table 1, Section 5. Appendix 2.	Table 3.1, Chapter 3. Appendix 3.
Tewkesbury BC	Section 5	Additionally, TBC are preparing a flood and water management supplementary planning document which, for completeness, should be included in the list of documents in section 5. Initial discussions have taken place with the County (David Lesser), Environment Agency and key local stakeholders. An initial draft is anticipated imminently with public consultation in the summer 2013 and adoption in autumn 2013.	Not available for inclusion in Scoping report Update 4.	Table 3.1, Chapter 3. Appendix 3.
Gloucester City Council	Section 5	Having looked at the revised Scoping Report (2013) I notice that it makes no mention at the Plans Policies and Programmes Section of the	Table 1, Section 5.	Table 3.1, Chapter 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		evidence base that is publicly available on the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy (JCS) website at www.gct-jcs.org, nor does it refer to any of the JCS consultation documents. With regard to Gloucester City Council documentation the current Community Strategy is known as the "City Vision" and the Gloucester City Plan is in the process of updating the 2002 2nd Deposit Local Plan and emerging Local Development Framework documents. I would be grateful if the above matters could be taken into consideration as part of your consultation.	Appendix 2.	Appendix 3.
Gloucestershire County Council (GCC) - Ecology	Pg.7	(International) suggest under international the EU Biodiversity Strategy to 2020 is added http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm	Table 1, Section 5. Appendix 2.	Table 3.1, Chapter 3. Appendix 3.
GCC – Ecology	Pg.8	(National) DELETE 'UK Biodiversity Plan', 'Working with the Grain of Nature: A Bio-diversity Strategy for England' and 'The Conservation of Habitats and Species (Amendment) Regulations 2012'. ADD 'The Conservation of Habitats and Species Regulations 2010 (as amended)' and 'Biodiversity 2020 – A strategy for England's wildlife and ecosystem services'. Consider ADDING 'National Character Area Profiles – Natural England' see http://www.naturalengland.org.uk/publications/nca/default.aspx	Table 1, Section 5. Appendix 2.	Table 3.1, Chapter 3. Appendix 3.
GCC – Ecology	Pg.8	(Regional) all documents in here subject to deletion from my perspective KEEP 'South West Nature Map' but DELETE 'South West Biodiversity Implementation Plan'.	Table 1, Section 5. Appendix 2.	Table 3.1, Chapter 3. Appendix 3.
GCC – Ecology	Pg.9	(Local) DELETE 'Biodiversity Action Plan for Gloucestershire' but ADD 'Gloucestershire Biodiversity Framework & Delivery Plan 2010' – see	Table 1, Section 5.	Table 3.1, Chapter 3. Appendix 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		http://gloucestershirebiodiversity.net/actionplan/index.php	Appendix 2.	
GCC – Ecology	Pg.11	Biodiversity) ADD a bullet point – 'Impacts on ecosystem services such as flood defence, water purification, soil formation and pollination'. This might however be woven into the two bullet points – 'Changes in soil conditions and or quality' and 'Changes in the quality of air and water. Pollution potential in terms of noise, vibration, light, dust.'	Table 2, Section 6.	Table 3.2, Chapter 3.
GCC – Ecology	Pg.18	(Item 12) REPLACE 'Gloucestershire Biodiversity Action Plan (BAP)' with 'Gloucestershire Biodiversity Framework & Delivery Plan'	Table 3, Section 7.	Table 3.3, Chapter 3.
GCC – Ecology	Pg.18	(Item 13) REPLACE first sentence with: Biodiversity decline: The priority species on the English List relevant to Gloucestershire are referenced on the Gloucestershire Biodiversity website at: http://gloucestershirebiodiversity.net/actionplan/priority-species.php	Table 3, Section 7.	Table 3.3, Chapter 3.
GCC – Ecology	Pg.18	Under 'Bird populations' DELETE '(The specifics are contained in the Gloucestershire BAP)'	Table 3, Section 7.	Table 3.3, Chapter 3.
GCC – Ecology	Appendix 1	Needs UPDATING to reflect suggested deletions and additions above. I can help with 'Gloucestershire Biodiversity Framework & Delivery Plan' which replaces the Gloucestershire BAP. The rest you can fill in the table with information from the documents concerned and/or websites.	Appendix 1	Appendix 3
GCC – Ecology	Appendix 2	(Other Baseline Information) (Biodiversity) Page 126 – EDIT first sentence to read: As a rural county Gloucestershire is relatively rich in habitats and species and much has been achieved through the Biodiversity Action Plan (BAP) process and ongoing through the new Local Nature Partnership, see: http://www.gloucestershirebap.org.uk/ for more details.	Appendix 2, Page 114.	Appendix 4.
GCC – Ecology	Pg.127	REPLACE map of European Sites with this one from the latest HRA Baseline Update 3 report.	Appendix 2, Page 115.	Appendix 4.

Respondent	Section	Comment	How/where consultation comments have been addressed	
GCC – Ecology	Pg.128	(Paragraph 1, last sentence) REPLACE with: Four SSSI areas have been additionally designated as National Nature Reserves (NNRs).	Appendix 2, Page 116.	Appendix 4.
GCC – Ecology	Pg.129	DELETE last two sentences of the first paragraph under the AONB map as ESAs no longer exist as such due to new agri-environment schemes.	Appendix 2, Page 117.	Appendix 4.
GCC – Ecology	Pg.129	Map 4 of Key Wildlife Sites is missing use this one below/next page	Appendix 2, Page 118.	Appendix 4.
GCC – Ecology	Pg.134	Page 134 (Flora and Fauna) REPLACE all text under this heading with amended updated text below: Flora and Fauna - Despite the large number of statutory and local designations, Gloucestershire has suffered from large-scale habitat and species loss over the last 50 years. This has largely been due to changes in farming practices. Among the species that have suffered from decline are farmland birds. At present approximately 100 species identified in the as UK priority species are thought to occur in Gloucestershire. Many of these species are also listed for protection under the European Union Habitats Directive including: the European Otter, the Dormouse, the Lesser Horseshoe and Greater Horseshoe Bat and the Pipistrelle Bat. Over 60 bird species listed under the EU Birds Directive have been recorded in Gloucestershire. Wetlands areas such as the Severn Estuary, Slimbridge Wildfowl Centre and the Cotswolds Water Park centre provide important habitats for over-wintering and migratory birds. In terms of the protection of flora and fauna, under Section 41(3) of the Natural Environment and Rural Communities Act 2006 (NERC) the Secretary of State must take steps (where they are reasonably practicable), and promote the taking of steps by others, to further the conservation of certain listed habitats and species. In light of this duty, seven sectors have been identified where actions taken by public bodies and other stakeholders could deliver significant conservation benefits for the habitats and species on the list. The English List is available on the Natural England website at: http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/pro	Appendix 2, Page 123.	Appendix 4.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		tectandmanage/habsandspeciesimportance.aspx The Gloucestershire Biodiversity Framework & Delivery Plan 2010 provides a basis for the conservation of local biodiversity which targets the conservation, enhancement and creation of priority habitats within the Gloucestershire Nature Map. The Gloucestershire Nature Map consists of a number of priority areas called Strategic Nature Areas (SNAs). When viewed alongside the rivers targeted by the Environment Agency through the Water Framework Directive process the Gloucestershire Nature Map represents a strategic ecological network for Gloucestershire. Additional to the county approach the Cotswold Water Park Biodiversity Action Plan 2007-2016 provides detailed information and biodiversity targets for the south west corner of the County and into Wiltshire and Swindon which can be found at: http://www.waterpark.org/wp-content/uploads/2013/01/FINALCWP-BAP-2007-16-v8print.pdf		
GCC - Ecology	Pg.145	(Landscape) (1st paragraph) (3rd sentence) – replace 'natural' with 'priority'.	Appendix 2, page 132.	Appendix 4.
GCC - Ecology	Pg.148	(Item 7) delete '(From PPS10 Annex E)'	Appendix 3.	Table 4.1, Chapter 4.
GCC - Archaeology		Plans, polices etc. referenced in the text – omissions: Although PPS 5 Planning for the Historic Environment is now superseded by the NPPF, the practice guide that accompanied it is still in force and will presumably remain so until government determines what further guidance it will issue to support the NPPF. The practice guide should therefore be referenced in the text and can be found at: http://www.english-heritage.org.uk/publications/pps-practice-guide/ The Minerals and Waste Core Strategies Joint Technical Evidence Paper WCS- MCS-6 section 6 lists a number of other information sources regarding the historic environment of the county that should be referenced as well.	Appendix 1.	Appendix 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
GCC - Archaeology		**Historic Environment statistics -** These need to be updated at Table 3 no 15, and on page 144 as follows: Scheduled Monuments: 602, Listed Buildings: 13432, Conservation Areas: 287 (6901 ha), Other archaeological sites/structures/buildings: 24,962.	Table 3, Section 7.	Table 3.3, Chapter 3.
GCC - Archaeology		**Appendix 2 Baseline information pages 144-5 -** The description of the historic environment here is rather thin. Section 2 of the Minerals and Waste Core Strategies Joint Technical Evidence Paper WCS-MCS-6 contains some useful material at Section 6 that could be used for this purpose.	Appendix 2, page 131.	Appendix 4.
GCC - Archaeology		**Appendix 3 Question 12 -** This currently covers only those sites which are designated. It should include reference to other archaeological sites and the wider historic landscape.	Appendix 3.	Table 4.1, Chapter 4.
English Heritage		**General Principles -** There are a number of general principles that English Heritage recommends are considered throughout this SA process: · The importance of a broad definition of the historic environment covering a wide range of heritage assets[31] including areas, buildings, features and landscapes with statutory protection, together with those parts of the historic environment which are locally valued and important, and also the historic character of the landscape and townscape* *[Note that the asterisk refers to the section of EH's letter called "Designation and Beyond – see below.]*. · Heritage assets and the wider historic environment are finite resources that are irreplaceable. · The historic environment is more than an environmental and cultural asset; it is an important driver for economic development and delivering social objectives. The historic environment contributes positively to all	Some of these general principles have been reflected in Tables 2, 3, 4/Sections 6, 7, 8/Appendices 1 and 2, and will continue to inform each stage in the	The general principles provided by English Heritage are very useful and have been reflected in the SA work and SA Report as follows: the description of environmental baseline (Chapter 3 and Appendix 4); the SA Framework (Table 4.1, Objectives 10 and 12); and the assumptions used for defining significant effects (see Table 4.2); cumulative effects and mitigation measures have also been considered (see Chapter 5 and Appendix 6); the expertise of GCC's archaeology team has also been

[31] The National Planning Policy Framework (2012) defines a Heritage Asset as 'A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the local planning authority (including local listing).' Designated heritage assets are listed as 'A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under the relevant legislation.' The Directive uses the term 'cultural heritage', which covers all aspects of the historic environment as defined by the NPPF. In addition, 'significant effects' on historic landscapes and townscapes might be addressed under the Directive issue of landscape.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		aspects of sustainable development. · The concept of significance requires careful consideration in the context of the historic environment and the SA process, which is focused on the identification and assessment of 'significant effects'. · The National Planning Policy Framework (NPPF) requires that heritage assets are conserved in a manner appropriate to their significance. The concept of significance in relation to heritage refers to the value of a heritage asset, because of its heritage interest which may be archaeological, architectural, artistic or historic. The setting of a heritage asset can also contribute to its significance. · The SA process is iterative in that the findings of each stage should be used to inform the next and this progression is clearly documented. · The assessment of potential impacts on the historic environment and heritage assets should include the consideration of cumulative effects. · An effective SA should avoid or minimise any adverse effects created by the plan in respect of the historic environment. It should also maximise potential benefits for the historic environment. · All appropriate mitigation, enhancement and monitoring for the historic environment and heritage assets should be clearly identified for delivery at the implementation stage. · Local authority conservation and archaeological staff are a key resource when developing a SA. These professionals are best placed to provide baseline information on the historic environment and heritage assets and advise on: o The significance of heritage assets; o Local historic environment issues and priorities; o How a policy or proposal can be tailored to avoid or minimise potential adverse impacts on the historic environment; o The nature and design of any required mitigation measures; and o Opportunities for securing wider benefits for the future conservation	SA.	drawn on as GCC's in-house site assessment findings have helped to inform the SA of the potential mineral sites (Chapter 5 and Appendix 6). Recommendations for monitoring have also been described (see Chapter 6).

Respondent	Section	Comment	How/where consultation comments have been addressed	
		and management of heritage assets.		
English Heritage		***Designation and Beyond** - The historic environment includes all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, including landscaped, planted or managed flora. Consequently, covering statutory designations is just one part of the baseline information on this topic. Other important considerations include: information held on Historic Environment Records; locally listed heritage assets; the character of the wider historic landscape, townscape or seascape and other valued historic landscapes; areas of archaeological importance and the potential for unrecorded archaeology. The condition of the historic environment is an important consideration, especially when analysing and updating the baseline and monitoring frameworks. Existing data sources include the English Heritage 'Heritage at Risk' Register, which includes Grade I and II* listed buildings at risk, (also Grade II listed buildings at risk in London), scheduled monuments, registered parks and gardens, registered battlefields, conservation areas and protected wreck sites: http://risk.englishheritage.org.uk/register.aspx Appendix 1 to this letter provides an extensive list of sources for a wide variety of historic environment information.	Noted.	As far as possible the SA process has sought to consider all aspects of the historic environment, although this can be difficult in a strategic level assessment that is not as detailed as a site-specific Environmental Impact Assessment, as specific proposals for development at a site are unknown. The SA assumptions table (Table 4.2) sets out how the historic environment data sources have been used.
English Heritage		**Scoping -** You should reassure yourself that at this scoping stage you have demonstrated the report has: 1. Established the baseline for the historic environment, including any trends and targets and gaps in the existing information; *2.* Identified sustainability issues and opportunities for the historic environment and heritage assets – *don't forget the potential impact on the setting of all heritage assets;* 3. Developed sustainability appraisal objectives – *again consider a broad definition not just archaeology and architecture;* 4. Identified indicators and targets;	Noted. These points have been reflected in Tables 2, 3, 4/Sections 6, 7, 8, and Appendix 2 and will continue to inform each stage in the SA.	Noted, as above, the SA Report has sought to address these points, as set out in Chapters 3, 4 and 5 and Appendices 2, 3, 4).

Respondent	Section	Comment	How/where consultation comments have been addressed	
		5. Considered how alternatives will be assessed; 6. Provided sufficient information on the proposed methodology for the appraisal to assess whether effects upon the historic environment will be properly addressed.		
English Heritage		**1. Baseline information -** English Heritage recommends that the baseline information describes the current and future likely state of the historic environment. This provides the basis for: · identifying sustainability issues; · predicting and monitoring effects; and · identifying alternative solutions. Maps, charts (current and historic) and photographs and other images can be very effective in synthesising data and illustrating its relevance to the plan area as well as demonstrating historic environment effects, particularly where supported by an analytical narrative. When collating and analysing the baseline data on the historic environment, it is also useful to identify relevant trends and targets. This process can be informed by the plan review and drawn from national, sub-national and local data sets. Baseline information can be both quantitative and qualitative, and needs to be kept up-to-date. There may also be a need to look at the wider geographic area in order to assess the likely significant environmental effects on the historic environment and heritage assets (e.g. traffic generation, setting issues). It is important that meaningful conclusions can be drawn from the baseline information, particularly what it means for the plan and how the historic environment is to be dealt with. Where there are gaps in information, we recommend that these are explained as part of the baseline description. Ways of tackling any identified gaps in the baseline can then be included in proposals for monitoring the implementation of the plan. Are you reassured the above information has been gathered, understood and applied? To determine the adequacy and scope of the baseline information available, English Heritage recommends that you are able to positively	Table 2, Section 6. Appendix 2.	Noted, as above, the SA Report has sought to address these points, as set out in Table 3.2, Chapter 3. Appendix 4.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		respond to the following questions: Which parts of the Gloucestershire are rich in heritage assets (designated and non-designated)? Are there areas which may have the potential for sites of historic or archaeological interest which are currently unidentified? Has the landscape character of the plan area been defined, if so, what are its distinctive features? In what ways does the historic environment contribute to local character and distinctiveness? Are there any areas where minerals workings are affecting the distinctive character of the place and the significance of heritage assets, including cumulative, small-scale changes? Are there expected to be such effects in the future? Are there implications for the setting of heritage assets? In what ways does the historic environment deliver other social, cultural, economic and environmental benefits? Which areas or features should be conserved or enhanced? How good or bad is the condition or quality of heritage assets and historic places? Do trends show that it is getting better or worse? Are heritage assets at risk from damage or neglect? How far is the current situation from any established thresholds or targets? Are existing problems reversible or irreversible, permanent or temporary?		
English Heritage		**Sustainability issues -** Analysis of such baseline information for the historic environment will help identify sustainability issues relating to the historic environment. There is a need to understand the contribution of the historic environment to sustainable development and its role in	Noted. The updated Scoping Report	The SA seeks to address these points. For example: Table 3.3, Chapter 3, Table 4.1, Chapter 4 and Chapter 5, and Appendix 4.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		delivering wider social, cultural, economic and environmental benefits. For example, heritage-led regeneration can provide opportunities for sustainable tourism, leisure and recreation activities, and help to strengthen the character of a place. Environmental problems, issues and opportunities affecting the historic environment, and to be addressed in the SA process may include: **Issues:** · Heritage assets at risk from neglect, decay, or development pressures; · Areas where, on current trends, there is likely to be further significant loss or erosion of landscape/ townscape character or quality; · Areas where development has had or is likely to have significant impact (direct and or indirect) upon the historic environment and/or people's enjoyment of it; · Traffic congestion, air quality, noise pollution and other problems affecting the historic environment; · Conserving and enhancing designated and non-designated heritage assets and the contribution made by their settings; · Conserving specific types of heritage assets, such as the rural heritage of a place; · Accommodating change and growth whilst sustaining and enhancing the significance of heritage assets and the valued character of a place. **Opportunities:** · Providing traditional building materials; · Promoting the innovative reuse of the existing building stock for social, cultural and or economic purposes; · Improving awareness, involvement, and understanding of, and access to, the historic environment; · Delivering heritage-led regeneration opportunities; · Promoting heritage based tourism;	addresses these points, covering them in Table 2, Section 6 and Table 3, Section 7 for example.	

Respondent	Section	Comment	How/where consultation comments have been addressed	
		· Contributing to green infrastructure networks; · Encouraging traditional building and craft skills development; and · Using the historic environment as an educational resource.		
English Heritage		**Sustainability Framework -** It is recommended that the application of the framework to the assessment of the historic environment is clear and iterative. Whatever method is used to review the framework and carry out the appraisal (i.e. use of a panel and/or consultants), there is a need to ensure the application of appropriate heritage expertise. While an objectives-based approach has generally been used, the Planning Advisory Service suggests that an alternative approach is to base the framework on a series of identified topics and/or sub-areas. English Heritage considers that this narrative based approach, focusing on an assessment against the baseline situation, would avoid pages of matrices resulting from an objectives-based approach. This alternative approach can include a historic environment topic paper; something we also recommend for the objectives approach, as a way of interpreting the information set out in matrices.	Noted, to be addressed in SA Report.	Noted, independent consultants have undertaken the SA and drawn on expertise of GCC archaeology team. An objective-led approach has been used however, as this is consistent with the method used for the Waste Core Strategy, which was found sound and adopted. A commentary/narrative has still been provided seeking to describe the potential effects of the MLP as a whole on each SA objective, including objective 12 relating to the historic environment (see Chapter 5).
English Heritage		**Objectives -** English Heritage considers that for the SA to meet the requirements of the SEA Directive it needs to include a specific objective: **"Conserve and enhance the historic environment, heritage assets and their settings**". At present reference to merely archaeology and architecture is too selective – see above*	This objective has been added to the SA Framework, Appendix 3.	Table 4.1, Chapter 4.
English Heritage		**Decision-making Criteria -** In developing your SA framework, you might benefit from using a more detailed decision-making criteria and related indicators to assess heritage. Such criteria can help to ensure that all the key heritage issues to be considered in the SA are incorporated in the SA framework and ensure that likely effects upon the historic environment are not masked. Examples of decision-making criteria are included in Appendix 2 to this letter.	Noted, to be addressed in SA Report.	Chapter 4 and Table 4.2. Chapter 5.

Respondent	Section	Comment	How/where consultation comments have been addressed	
English Heritage		**Indicators and monitoring -** Indicators should clearly demonstrate the impact(s) of the plan on the historic environment. All proposed indicators for monitoring the significant effects of a plan should be set out in the Environmental / Sustainability Appraisal Report and finalised in the adopted plan. English Heritage's annual series of national and regional reports, *Heritage Counts: State of the Historic Environment*, includes a suite of data sets for monitoring heritage assets and the historic environment. It is recommended that these be supplemented, wherever possible, by locally derived indicators. In devising historic environment indicators for the appraisal or monitoring of the significant effects of a development plan English Heritage recommends that: · the indicators clearly relate to the appraisal process, such as the accompanying objectives/sub-objectives (decision-making criteria), the baseline for the historic environment, and any identified effects and proposed mitigation measures; · the indicators are appropriate and relevant to the type and scale of the plan under consideration; · the indicators address positive and negative effects; · consideration is given to cumulative, secondary and synergistic effects; and · use is made of both qualitative and quantitative data. Selecting indicators which are directly linked to SA objectives is a complex process which is exacerbated in respect of the historic environment by the relative lack of consistently monitored data when compared to other topic areas. Notwithstanding this, a robust monitoring framework for the historic environment must be included to meet the requirements of SA in terms of: · Identifying any unforeseen adverse effects of implementing the plan and enabling appropriate remedial action to be taken; · Testing the accuracy of predictions made in the appraisal and improving future practice;	Noted. This will be borne in mind once the MLP is adopted and the indicators are set.	Chapter 6.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		· Determining whether the plan is contributing to the achievement of the desired objectives and targets for the historic environment; · Checking the delivery and performance of mitigation measures; and · Collecting information for future planning documents. Appendix 3 to this letter presents examples of indicators which can be tailored to local circumstances and the type and scale of the plan under consideration. The table shows the different ways in which indicators can be framed to: · describe the baseline or state of the historic environment; · monitor the type of impact or outcome; and track wider policy responses or actions taken to conserve and improve the historic environment, and mitigate any degradation (including avoiding or rectifying adverse impacts).		
Natural England	Table 1	Additions to Table 1 List of Plans, Projects and Documents - *Biodiversity 2020: A strategy for England's wildlife and ecosystem service*s, at a national level builds on the Environmental White Paper to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people. It is underpinned by two international strategies: *The Convention on Biological Diversity, COP Decision X/2, Strategic Plan for Biodiversity 2011-2020* - a Global Convention *Our life insurance, our natural capital: an EU biodiversity strategy to 2020*, European Commission (2011) *Biodiversity 2020: A strategy for England's wildlife and ecosystem service*s has superseded *Working with the Grain of Nature: A Biodiversity Strategy For England* dated 2002.	Table 1, Section 5. Appendix 1.	Table 3.1, Chapter 3. Appendix 3.
Natural England		National Character Areas (NCA) have recently been updated by Natural England. These divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity	Appendix 2.	Appendix 4.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries, making them a good decision making framework for the natural environment. The environmental evidence bases (which will continue to be updated) and profiles themselves are being made more widely available. The NCA profiles are designed as guidance documents to help to achieve a more sustainable future for individuals and communities. The profiles include a description of the key ecosystem services provided in each character area and how these benefit people, wildlife and the economy. They identify potential opportunities for positive environmental change and provide the best available information and evidence as a context for local decision making and action. Gloucestershire County Council administrative area is covered by 5 NCA. 103 Malvern Hills, 105. Forest of Dean and Lower Wye, 106. Severn and Avon Vales, 107. Cotswolds, 118. Bristol, Avon Valleys and Ridges. The NCA are supported by a local, sub-national and national evidence base which should also be consulted to ensure that these where relevant have been included in the list of Plans and Projects. It would also be helpful if the Mineral Plan also tabled the emerging Local Plans and Core Strategies since these already set out the broad principles of location of new development. The need for a coordinated approach to all development and the inter-relationships between all local plans to take into account pressures on landscapes and designated sites is vital.		
Natural England	Table 2	Potential Environmental Effects of Minerals development and Likely Future Environmental Status in the Absence of the MWDF. We advise the following alterations: *Indirect and Direct* Potential negative effects are: · Potential loss of *protected* species *and loss or deterioration of priority habitats* · Habitat *deterioration,* loss and*/or* fragmentation from land take. · Changes in soil conditions and or quality *or loss of best and most versatile soils.* · Pollution potential in terms of noise, vibration, light, dust, *air and water*	Table 2, Section 6.	Table 3.2, Chapter 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		borne pollutants.		
Natural England	Table 2	Comment on the likely future environmental status in the absence of the Plan. It should be noted that the absence of a Plan would not lead to unregulated development (enforcement procedures should prevent this) but unplanned development which is not likely to be the most sustainable option.	Table 2, Section 6.	Table 3.2, Chapter 3.
Natural England	Table 2	We advise the following alterations – · Plans contain policies which aim to protect *and enhance* the environment. Without these plans it is more likely that environmental designations would be damaged by unregulated *unplanned* development *and the opportunity to enhance the environment, and protect and improve environmental networks severely limited.* · The value of nearby land, property or other material assets is not a material consideration for Planning and this should be excluded. · Impacts on Assets should also include conflicts with existing or planned infrastructure such green infrastructure assets. Potential landscape / visual effects as a result of quarrying may also include: distraction and blocking of views, by faces or accompanying development, change of scale, addition of feature (such as plant) and urbanisation of rural landscapes.	Table 2, Section 6.	Table 3.2, Chapter 3.
Natural England	Table 3	The SEA Directive Annex I directs that only existing environmental problems which are relevant to the plan or programme should be considered. Table 3. Sustainability Issues and Problems in Gloucestershire should therefore only consider issues are likely to have greater significance to the development of minerals policy in Gloucestershire and not general issues.	Table 3, Section 7.	Table 3.3, Chapter 3.
Natural England	Table 3	Point 10 of table 3 Difficulties in terms of protecting Gloucestershire's environment whilst providing minerals – this is a key issue and more over a fundamental reason for undertaking Strategic Environmental Assessment through Sustainability Appraisal. Other important	Table 3, Section 7.	Table 3.3, Chapter 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		environmental assets have not been considered and this issue warrants more careful consideration and perhaps a table of its own.		
Natural England	Table 3	This is also true of point 9 *issues with restoration* including that within the Cotswold Water Park. As a strategic location for mineral extraction, the correlation between mineral extraction in the Cotswold Water Park and biodiversity require a more detailed appraisal in the table, particularly · Protection and enhancement of designated sites as well as consideration of whole environmental asset · the need for a more coherent approach to restoration and after-use, · matching mineral development to priorities for after-use · Ensuring that environmental priorities are considered for the lifetime of a quarrying operation. · Consideration of the need for an eco-systems services approach to balance the differing and sometimes conflicting needs of biodiversity and people.	Partially within Table 3, Section 7.	Comment has been fully addressed in Table 3.3, Chapter 3.
Natural England	Table 3	Point 12 The general state of Gloucestershire's biodiversity, the condition of SSSIs / sites protected under the Habitat's Directive / locally designated sites and Point 13 Decline in species biodiversity - in particular of certain bird species in Gloucestershire appear to be based on older data at least 13 years old. This is not sufficient and should be updated with the use of more recent evidence such that contained or derived from National Character Areas or more recent SSSI condition surveys, the County Bird report and records in the Local Biodiversity Record Centre.	Table 3, Section 7.	Table 3.3, Chapter 3.
Natural England	Table 3	In addition, particular issues that we also advise inclusion of are: 1. Impacts on protected species in the Forest of Dean particularly bats associated with the Special Area of Conservation. Other proposed development in the area should also considered, in combination with mineral development.	Table 3, Section 4.	Table 3.3, Chapter 3. Point 3 is not agreed with, as the Minerals Local Plan is trying to achieve this and there is also an adopted Waste Core Strategy.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		2. Over-abstraction of water from the River Severn 3. The lack of an integrated county-wide strategic approach to all development leading to uncoordinated approach with subsequent pressures on protected landscapes and priority habitats and designated sites.		
Natural England		We advise the following wording to be considered for the following objectives which should not just consider Gloucestershire but also consider the sustainability issues arising from mineral development there outside of the County particularly considering cross –border issues.	Appendix 2.	The proposed wording has been addressed as detailed in the rows below.
		Access - To protect and enhance networks of pedestrian and cycle routes, to ensure connections between people and places and the integration of new development into the natural, built and historic environment.		The protection of recreational assets is already covered by SA Objective 10. The protection of pedestrian and cycle routes are included in the SA Assumptions for SA Objective 10. See Table 4.1 and 4.2, Chapter 4.
		Air Quality - To help to meet local, national and international objectives for air quality.		This has been added to SA Objective 15. See Table 4.1 and 4.2, Chapter 4.
		Biodiversity - To conserve and enhance biodiversity by establishing coherent, resilient ecological networks, protecting irreplaceable habitats (including Ancient Woodlands), minimising the impacts of development and providing net gains in habitats/biodiversity where possible.		These proposed amendments have been incorporated into the sub-objectives for SA Objectives 7 and 9. See Table 4.1 and 4.2, Chapter 4.
		Countryside - To protect intrinsic character and beauty of the countryside		SA Objective 8 includes wording with a similar meaning: "To protect, conserve and enhance the landscape in Gloucestershire." SA objective 8 has therefore not been

Respondent	Section	Comment	How/where consultation comments have been addressed	
				amended. See Table 4.1 and 4.2, Chapter 4.
		Energy- To contribute to renewable or low carbon energy generation, while ensuring that adverse impacts are addressed.		Nothing specific is included on energy in the SA framework. However, SA Objective 18 addresses climate change; furthermore mineral sites do not hold much potential to contribute to renewables or low carbon energy production. See Table 4.1 and 4.2, Chapter 4.
		Geology - To prevent harm to geological sites and features of conservation interests.		The wording of SA Objective 11 has a similar meaning to this suggestion. SA Objective 11 has therefore not been amended. See Table 4.1 and 4.2, Chapter 4.
		Green Infrastructure - To define Green Infrastructure - a network of multi-functional green space, both urban and rural, which supports economic growth and regeneration, delivers a wide range of quality of life benefits, supports natural systems and biodiversity and help reduces the negative impacts of climate change.		Reference to Green Infrastructure and its definition have been included in SA Objective 9 and its justification. See Table 4.1 and 4.2, Chapter 4.
		Land / Soils - To use areas of poorer quality land in preference to the best and most versatile agricultural land, where development in the countryside is demonstrated to be necessary (and previously developed land?)		This proposed amendment is already addressed in SA Objective 14 and the assumptions to be used in the SA. See Table 4.1 and 4.2, Chapter 4.
		Protected Landscapes - To conserve landscape and scenic beauty Areas of Outstanding Natural Beauty and their wildlife and cultural heritage encouraging more people to access these areas by public transport, cycling or walking		SA Objective 8 addresses protected landscapes, including AONBs. Additionally, SA Objective 10 seeks to protect and conserve recreational assets; however it is

Respondent	Section	Comment	How/where consultation comments have been addressed	
				not within the remit of a Mineral Local Plan to encourage the use of sustainable public transport modes. See Table 4.1 and 4.2, Chapter 4.
		Landscape - To protect and enhance valued landscapes, sites of geological interests and soils;		This proposed amendment it already addressed in SA Objectives 8, 11 and 14. See Table 4.1 and 4.2, Chapter 4.
		Minerals - To maintain land-banks of non-energy minerals from outside Areas of Outstanding Natural Beauty and ensure mineral development, does not adversely impact the natural and historic environment, human health or aviation		The proposed amendment "to maintain land-banks of non-energy minerals from outside Areas of Outstanding Natural Beauty" is already a requirement of Minerals Local Plans in accordance with paragraph 144 of the National Planning Policy Framework. Furthermore: impacts on the natural and historic environment are addressed in SA Objectives 7 and 12; impacts on human health are addressed in SA Objective 1; and impacts on aviation are addressed in SA Objective 5. See Table 4.1 and 4.2, Chapter 4.
		Water - To mitigate and adapt to climate change, taking full account of flood risk, coastal change and water supply and demand considerations		This proposed amendment is already addressed in SA Objective 13 and 16. Coastal Change is not addressed but this does not apply to Gloucestershire. See Table 4.1 and 4.2, Chapter 4.
Natural	Appendix 3	The Appendix 3 questions could be more ambitious to reflect the need to enhance and opportunities to improve rather than only consider the	Appendix 3	Table 4.1, Chapter 4.

Respondent	Section	Comment	How/where consultation comments have been addressed	
England		protection of assets. For example, an additional environmental APPENDIX 3 Subsidiary Question would be how can restored mineral workings contribute to Biodiversity 2020 targets?		
Wessex Water		I refer to your letter of 27th March and advise we have no suggestions to alter the proposed Scoping Report.	N/A	N/A
Wessex Water		Please note, however, that reference is made to Wessex Water's Draft Water Resources Plan; this was Wessex Water's last Water Resources Management Plan which was published as a final version (not draft) in June 2010. Wessex Water has recently prepared a revised draft WRMP which is due to be published for public consultation next Tuesday, 7th May. http://www.wessexwater.co.uk/water-and sewerage/threecol.aspx?id=578&linkidentifier=id&itemid=578	Table 1, Section 5. Appendix 1.	Table 3.1, Chapter 3. Appendix 3.
Environment Agency	Table 1	**Relevant plans, policies and documents.** We note the inclusion of Wessex, Thames and Severn Trent Water Management plans. Gloucestershire also includes the operational areas of Welsh Water and a small part of Bristol Water. These Water Management Plans may also therefore be relevant. We note the inclusion of the Gloucestershire Strategic Flood Risk Assessment (SFRA). We agree this is the appropriate SFRA to include in the SA. Since this SFRA was completed the various district Councils have undertaken additional Level 2 SFRAs in support of their emerging Local Plans. These SFRAs supplement the original SFRA, and therefore may provide useful flood risk information that focuses more closely on certain geographic areas. This information will be useful for the Minerals Core Strategy and any allocations included within it. As such you might consider including the various district SFRAs in the SA as well. We note the various district Local Plans / LDFs are referred to but the Cheltenham, Tewkesbury & Gloucester Joint Core Strategy is not specifically referred to. This list may therefore need updating. The table does not currently include the following relevant environmental plans and strategies: River Basin Management Plans (RBMPs). These plans show the ecological	Table 1, Section 5. Appendix 1. The Welsh Water and Bristol Water Management Plans are to be addressed in SA Report. The CFMPs nor the SMPs are included as they are covered by the SFRAs.	Table 3.1, Chapter 3. Appendix 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		status of water bodies. They identify the pressures facing the water environment, and the actions required under WFD to address issues. The RBMPs are available at: http://www.environment-agency.gov.uk/research/planning/33106.aspx The Thames RBMP covers the Cotswolds District, and the Severn RBMP covers the other Gloucestershire Districts. Catchment Abstraction Management Strategies (CAMS). These documents are licensing strategies that set out how the EA will manage water resources, existing and future abstraction licences and water availability within river catchments. The CAMS area available at: http://www.environment-agency.gov.uk/business/topics/water/119927.aspx There are 6 different CAMS that cover the river catchments in Gloucestershire listed under the different EA regions as follows: Midlands – Severn Corridor; Severn Vale, EA Wales – Wye, South West – Bristol Avon and North Somerset Streams, South East – Cotswold; Thames Corridor. In addition there are Catchment Flood Management Plans (CFMPs) and Shoreline Management Plans (SMPs). However the various SFRAs of the Districts, along with the original SFRA for the Minerals and Waste Development Frameworks included the relevant references to these plans. As such it may not be relevant to include the CFMPs or SMPs specifically as they are 'covered' by the SFRAs.		
Environment Agency	Table 3	**Sustainability issues and problems in Gloucestershire -** We concur with the list of sustainability issues for Gloucestershire where relevant to our remit. Items 12 and 13 that relate to biodiversity may make useful reference to climate change as this is considered to be a relevant factor in biodiversity decline. We consider the table should also include the sustainability issue of water quality. The Water Framework Directive (WFD) aims to protect and enhance water bodies. Water bodies include watercourses, canals and groundwater bodies. There are various deadlines for meeting 'good' ecological status, the majority being by 2027 (although some deadlines are sooner – 2015 and 2022). Various aspects can affect the achievement of good ecological status, such as diffuse and point source pollution, low flows, biodiversity, barriers to fish	Table 3, Section 7.	Table 3.3, Chapter 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		passage and geomorphology. Development, including minerals development, can impact water bodies. Under the WFD, there must be no deterioration in the ecological status of water bodies. Therefore development must not result in such deterioration, and wherever possible it should seek opportunities to enhance water quality. In Gloucestershire the majority of the water bodies are not currently meeting 'good' status and are only at 'moderate' status or below. Accordingly water quality is a significant issue. The River Basin Management Plans show the current status including reasons for failure. Therefore there is good information available on this matter and a way of setting targets, indicators and monitoring progress. Accordingly we consider this aspect to be a relevant sustainability issue for the SA.		
Environment Agency	Table 4	**Sustainability appraisal objectives.** We concur with the sustainability objectives in table 4. We recommend number 13 on flood risk is amended to include an enhancement element. For example it could read: *"To prevent flooding, in particular preventing inappropriate development in the floodplain, and reducing flood risk where possible, and to ensure that minerals development does not compromise sustainable sources of water supply."* Furthermore, we consider the inclusion of water supply / resources in the above objective may be confusing. It may be better to include water resources/supply in number 16 along with water quality. For example *"To protect and enhance water quality and quantity in Gloucestershire"*		Table 4.1 and Table 4.2, Chapter 4. Appendix 2.
Environment Agency	Appendix 1	**Relevant plans, programmes, strategies and initiatives.** Notwithstanding the above comments for Table 1, we note and welcome the inclusion of the WFD here and concur with the columns and references to the RBMPs. With regards to the SFRA, we note the PPS25 Sequential Test is referred to. PPS25 has now been removed and the NPPF is the relevant policy. The NPPF and its Technical Guidance includes many of the previous PPS25 requirements including the need for Sequential Testing.	Table 1, Section 5. Appendix 1.	Table 3.1, Chapter 3. Appendix 3.
Environment Agency	Appendix 2	**Baseline information.** As per our comments on Table 3 above, water quality is an issue for Gloucestershire as the majority of water bodies in	Table 3, Section 7.	Table 3.3, Chapter 3.

Respondent	Section	Comment	How/where consultation comments have been addressed	
		the County are not yet meeting 'good' ecological status in accordance with the WFD. The information in the Water section will need updating in line with the latest RBMP information. Whilst the individual break down of biological and chemical water quality is still relevant, the overall picture in terms of the WFD goals and current ecological status is relevant to the SA and should also be referenced.		
Environment Agency	Appendix 3	**Subsidiary questions.** The questions under section 13 on flood risk could be altered as follows: *Can the risk of flooding be managed and reduced through site design?, Will surface water runoff be sustainably managed?* We recommend the following addition to first question in section 16: *What is the proximity of vulnerable surface or groundwater and what are the likely impacts on these features?*	Appendix 3.	Table 4.1, Chapter 4.

Summary of consultation responses received during the Gloucestershire Minerals Local Plan Site Options and Draft Policy Framework consultation (June – August 2014) and the Additional Site consultation (February – March 2015)

Respondent	Response to consultation question in the MLP Consultation Document: Sustainability Appr–isal - Do you have any comments in relation to the Sustainability Appraisal?	How/where consultation comments have been addressed in this SA Report
Mr Rohan Torkildsen, South West Region Historic England	Site options for crushed rock and sand and gravel Having considered the 35 options and initial site assessments in the Sustainability Appraisal (SA) I have the following comments. The GMLP and the SA sets out the heritage assets likely to be affected by development and in many cases suggest there may be a "negative effect". However the degree of such harm (substantial or less than substantial?) cannot be determined until "proposals are known". Nevertheless as the local authority probably already knows the likely form of the future extra–tion - due to similar current operations in the c–unty - I believe you can, and should, be able to come to a view, at this stage. Without coming to such a view before sites are allocated the local authority will not be able to: 1. demonstrate that an appropriate consideration has been made of how the sites contribute to the significance of the assets affected (NPPF Paragraph 129), nor be able to assert that it has; 2. identified land where development would be inappropriate because of its historic significance in accordance with NPPF Paragraph 157. To address this matter could I strongly recommend the methodology in the Setting of Heritage Assets (English Heritage, October 2011, and revised draft for consultation August 2014) is applied, and an appropriate heritage assessment is undertaken. This methodology includes a straightforward step by step assessment process as follows: Step 1: identify which heritage assets and their settings are affected – you have already done this; Step 2: assess whether, how and to what degree these settings make a contribution to the significance of each of the affected heritage assets – this has yet to be undertaken; Step 3: assess the effects of the proposal, whether beneficial or harmful, on that significance – this has yet to be carried out, and; Step 4: explore the way to maximise enhancement and avoid or minimise harm – this is eluded to but currently lacks clarity.	Noted. GCC commissioned Atkins to carry out landscape assessments for all of the site options, which included an assessment of potential impacts on historic landscape character and local heritage assets (reports are available for each Allocation, dated June 2015). In addition, GCC's own assessment of the Allocations includes reference to potential archaeological assets that could be affected by extraction. These assessments have been used to inform the SA findings for SA objective 12 for the proposed Allocations (see Chapter 5 and Appendix 6).

Respondent	Response to consultation question in the MLP Consultation Document: Sustainability Appr–isal - Do you have any comments in relation to the Sustainability Appraisal?	How/where consultation comments have been addressed in this SA Report
	Unfortunately without this evidence you will not be able to assert that the allocations, and the amount to be extracted, can be delivered without causing substantial harm to the affected heritage assets, contrary to explicit legislation and national planning policy. The GMLP and the SA also demonstrate that the local authority is unclear as to the degree of importance (national, regional or of local significance) of the archaeology at many of the sites. Before the principle for extraction can be agreed further assessment and clarification will be required. On numerous occasions the SA refers to site options where development is likely to cause significant harm. However the language of the NPPF is not used and therefore one cannot be sure whether an allocation would conform to government policy for the historic environment or not. A reassessment of the sites, as suggested above, should address this matter and help inform unambiguous conclusions. CRFD1 A B & C. CRFD2 A. CRFD4. CRCW1. CRCW2 A, B & C. CRCW3. CRCW4 etc.	
Amanda Grundy Consultation Service Natural England	The SA has been an iterative process which appears to have provided a robust and systematic assessment of the draft Plan. The SA findings and recommendations have helped to refine emerging policies and site options and we are satisfied that the requirements of the Strategic Environmental Assessment (SEA) Directive have been met for this stage of the plan preparation process.	Noted, no action required.
Mr Mark Williams	Not had time to review.	Noted, no action required.
Mr Saleem Shamash	No.	Noted, no action required.

Respondent	Response to consultation question in the MLP Consultation Document: Sustainability Appr–isal - Do you have any comments in relation to the Sustainability Appraisal?	How/where consultation comments have been addressed in this SA Report
Mr Andrew Scarth	Table 3.3 No 15 makes no reference to the Upper Thames Catchment Area. Table 5.9 SGCW5 (A, B, and C) and SGCW6 have between them four very negative impacts and only nine marginally positive impacts; four of these are on employment opportunities which are limited at best and not sustainable as the employment lasts only as long as the workings continue; a further four are on restoration of the site which is a subjective view, putting man-made landscape ahead of natural; and the last being transport, the scoring of which is questionable at the least as it gives a positive score to any area within 1km of a major road. A more rational view would appreciate that the effect on traffic of any working will be negative, although clearly less negative the closer the major road.	Noted. The baseline information section and Table 3.3 has been updated by GCC in this 2016 SA Report. The parcels SGCW5 (A, B, and C) and SGCW6 now constitute Allocation 10 in the 2016 MLP Consultation Draft. The SA findings for this Allocation are shown in Chapter 5 and Appendix 6 of this SA Report, and reflect the assumptions regarding significant effects set out in Table 4.2.
Mr D J Luckett	No Additional Comments Received via email 23.7.14 I write in follow-up to my completion of your Gloucestershire Minerals Local Plan Site Options and Draft Policy Framework Consultation Document Sustainability Appraisal questionnaire. There is a clear need for the plan to have considered all of the social, environmental and health issues before decisions are taken to include sites in the plan. The Sustainability Statement in the document is frankly not 'entirely reasonable' by virtue of the repetitive nature of the responses to the various issues and sweeping generalizations that seek to minimize impacts. There appears to be a rush to identify sites, based on recommendations made to the Council by developers that are clearly going to have significant adverse impacts on communities. Studies must be conducted into the likely adverse effects such extractions would have on the population especially where sites are located close to dwellings. Health, Social and Economic impact must be assessed prior to sites being given preferred status.	Noted. The SA follows NPPG and good practice, and has predicted social, environmental and health and amenity impacts from minerals extraction at the proposed Allocations against SA objectives 1, 2, 7-17 (see Chapter 5 and Appendix 6).

Respondent	Response to consultation question in the MLP Consultation Document: Sustainability Appr–isal - Do you have any comments in relation to the Sustainability Appraisal?	How/where consultation comments have been addressed in this SA Report
Mr Toby Catchpole Gloucestershire County Council	No comments.	Noted, no action required.

Appendix 2

Audit trail of reasonable alternatives considered during preparation of the Gloucestershire Minerals Local Plan

Minerals Core Strategy Issues & Options (2005-2007)	Minerals Core Strategy Preferred Options (2008)	Minerals Local Plan Site Options and Draft Policy Framework Consultation Document (June 2014)	Minerals Local Plan Pre-publication Consultation Draft (September 2016)
Time period for MCS/MLP			
ISSUE M1. Setting an Appropriate Timeframe for the MCS **(Option 1):** 10 years from the date of adoption. As detailed in the Minerals Core Strategy Issues & Options Paper SA Report (September 2006) this option was not favoured, although there were a number of positive scores in the short to medium term. **This option was dropped** due to the SA test at Issues & Options and the fact that this timeframe would forecast the MCS ending at the end of 2019. Although this option met the minimum timescale advised by PP12, it failed to reflect the time horizon of the RSS (which is to 2026) also as advised by PPS12. Furthermore, there were timeframe issues associated with published national and regional aggregate guidelines that were referred to and expanded upon in MPS1. Of particular interest was the advice to maintain reserves equal to a 10-year landbank for crushed rock and a 7-year landbank for sand & gravel. Based on the national and regional aggregate guidelines,	In the 2008 Preferred Options Consultation paper the Vision refers to 2026, and the introduction to the Spatial Strategy (para. 92) stated that 2026 as the date up to which the county's mineral resources should be safeguarded or considered for future working. No further options for the time period for the MCS were considered at this stage. The time period was not subject to separate SA; generally, an extended time period just means that the sustainability effects identified for the rest of the plan will occur over a slightly different time period.	In the 2014 Consultation Document, the end date for the MLP changed to 2030, which reflected the NPPF requirement for local plans to cover an appropriate time scale, preferably a 15-year time horizon (para. 157 of the NPPF). Taking 2015 as the start date for the MLP, 2030 became the end date for the plan. No further options for the time period for the MLP were considered at this stage. The time period was not subject to separate SA; generally, an extended time period just means that the sustainability effects identified for the rest of the plan will occur over a slightly different time period.	In the 2016 Consultation Draft, the end date has been updated again to reflect the revised start date. The MLP will now run from 2018-2032. No further options for the time period for the MLP have been considered at this stage. The time period was not subject to separate SA; generally, an extended time period just means that the sustainability effects identified for the rest of the plan will occur over a slightly different time period.

Minerals Core Strategy Issues & Options (2005-2007)	Minerals Core Strategy Preferred Options (2008)	Minerals Local Plan Site Options and Draft Policy Framework Consultation Document (June 2014)	Minerals Local Plan Pre-publication Consultation Draft (September 2016)
which run through to 2016, this approach sets a policy timeframe of 2026 for crushed rock and 2023 for sand & gravel. **(Option 2):** To at least the end of the guideline period for aggregate provision (i.e. 2016). At Issues and Options stage the SA revealed uncertainties in the longer term. **This option was dropped**, see second part of the comments given for Option M1 above concerning MPS1 and the landbank requirements. This option did not specify how long after 2016 would potentially be acceptable. **(Option 3):** To 2026, fitting in with Regional Spatial Strategy timescales. This option was generally favoured due to the fact that there are potentially positive long term effects in terms of the provision of aggregates. **This option became the preferred option.**			
Vision and strategic objectives			

Minerals Core Strategy Issues & Options (2005-2007)	Minerals Core Strategy Preferred Options (2008)	Minerals Local Plan Site Options and Draft Policy Framework Consultation Document (June 2014)	Minerals Local Plan Pre-publication Consultation Draft (September 2016)
ISSUE M2. Setting an Appropriate Spatial Vision and Strategic Objectives for the MCS **(Option 1):** Business as usual – The vision in Minerals Local Plan. **(Option 2):** The proposed vision in the MCS. At Issues and Options stage the SA indicated that the 'business as usual' current vision in the MLP was very comprehensive and broadly positive in terms of the tests against the SA objectives. However **Option 1 was not favoured over Option 2 and it was dropped**; a primary reason being that given (for Issue M1 Option 1) above concerning MPS1 and the specific landbank requirements. **Option 2 was favoured** at the Issues and Options stage but following consultation stakeholders and consultees such as GOSW indicated that a more 'spatial' and expanded vision would be desirable. (See also the comments given above (for Issue M1 Option 1) concerning MPS1 and the specific landbank requirements. Furthermore, the revised spatial vision developed for the Preferred Options stage of the MCS needed to	**The Preferred Options included the following Spatial Vision (MPO1)**: "By 2026 Gloucestershire will be a clean, green, healthy and safe place in which to live, work and visit. It will be a leading county in managing its mineral resources and a successful contributor towards the achievements of sustainable development, sustainable communities, and reducing the impacts of climate change. Local mineral resources will be integral to delivering renewal, regeneration and urban growth for Gloucester, Cheltenham and elsewhere in the county. Specialist minerals will also have an important role in revitalising and restoring Gloucestershire's historic and quality built environments. However, mineral supplies from Gloucestershire will no longer be focused on primary extraction. Instead, greater emphasis will be placed upon maximising the reuse of materials and recycling of construction & demolition wastes. Support will also be given to the importation, by more sustainable forms of transport, of secondary and alternative aggregates from	A further revised vision was included in the 2014 MLP Consultation Document. Amendments were made to the 2008 vision, both in the light of the consultation responses made then and also to ensure that the vision was up-to-date and NPPF compliant, including the addition of a specific reference to minimising the risk of birdstrike, changing the date to 2030 and the removal of references to regional planning. However, due to comments about the vision being too lengthy, the revised version was shorter and more succinct (also in accordance with the NPPF). **The Proposed Spatial Vision stated:** By 2030 Gloucestershire will be a clean, green, healthy and safe place in which to live, work and visit. It will be a leading county in managing its mineral resources and a successful contributor towards the achievements of sustainable development, sustainable communities, and reducing the impacts of climate change. Local mineral resources will be integral to delivering renewal, regeneration and growth in the	The Vision has been further amended in the 2016 MLP Consultation Draft. GCC has stated that all of the changes to the early part of the plan – vision and objectives represent a combination of taking into account previous consultation comments, the evolution of thinking about the plan's policies and what can realistically and feasibly be achieved, and a tighter adherence to the content of the NPPF and PPG. The original vision and objectives had not been heavily scrutinised with regards to the changes that have occurred following the shift from the suite of national PPSs and MPSs to the NPPF. **The Proposed Vision states:** At the start of 2033, Gloucestershire will be a cleaner, greener, more healthy and safer place in which to live, work and visit. It will be a leading county in managing its mineral resources and a successful contributor towards the achievement of sustainable development. Local mineral resources will have played a key part in delivering

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take into account the conclusion of the SA process. In this instance, there was a mandate for the revised vision to be clearly set out with a positive steer towards the future of Gloucestershire. **The strategic objectives** were as follows: 1. To identify, conserve and safeguard Gloucestershire's finite mineral resources from unnece inimizing onsation by other forms of development. 2. To ensure that the appropriate provision is made to meet the local, regional and national demand for minerals from sustainable sources in Gloucestershire. 3. To protect where possible, the natural, historic and cultural assets of Gloucestershire. 4. To ensure minerals sites are restored to the highest possible standard that is capable of providing for a range of sustainable after-uses, and that this is done as quickly as possible. 5. To secure enforceable, sound working practices inimizinimise the adverse impacts of mineral developments on the local communities, the local economy	within and outside the region. The county will also be known as an active supporter of regional supply targets for aggregates derived from alternative sources. Nevertheless, primary minerals will remain an essential part of the county's mineral supply, not only in terms of meeting local need but also in contributing to regional guidelines. Mineral working will include; limestone used as a crushed rock and sand & gravel for aggregate purposes; limestone and sandstone for natural building & roofing stone; clay for civil engineering and brick making; and coal for energy generation. The key resource areas will be – the Forest of Dean; Cotswolds; Upper Thames Valley; and the Severn Vale Corridor. The provision and supply of primary minerals will be made following the consideration of the consequences of local environmental capacity and the availability of viable and less constrained, but no less sustainable, resources from outside of Gloucestershire. Furthermore, where mineral working takes place, amenity, health, quality of life and economic vitality will be paramount to the decision making process.	county. Specialist minerals will also have an important role in revitalising and restoring Gloucestershire's historic and quality built environments, taking account of the different roles and character of different areas. Greater emphasis will be placed upon maximising the reuse of materials and recycling of construction & demolition wastes as well as reducing in-site waste and promoting the optimum and most appropriate use of minerals. However, primary minerals will remain an essential part of the county's mineral supply, particularly in terms of meeting local need. Provision for minerals will be made taking account of Gloucestershire's environmental capacity. Although road haulage is likely to remain the dominant form of transport, smarter supply chains will be sought. These include stricter haulage routes and more efficient practices. Through this approach vehicle movements for minerals will be reduced on local roads leading to a reduction in vehicle emissions. This will also help curb local traffic growth, wear and tear on the road network, and reduce other adverse impacts such	renewal, regeneration and economic growth throughout the county. Specialist minerals will have been important in revitalising and restoring Gloucestershire's historic built environments; and supporting the delivery of key items of infrastructure, housing and increased employment opportunities. The working of primary minerals will have remained an essential part of the county's mineral supply, particularly in meeting local demands, but also in contributing to national need. Nevertheless, wherever possible, positive and tangible steps will have been made to reduce reliance on primary minerals by: - facilitating their optimum, efficient and most appropriate use; promoting the re-use of building and other construction materials; assisting the increased and diversified use of recycled construction & demolition wastes and alternative secondary aggregate, particularly from local sources. Although road haulage will have been the dominant form of moving minerals in, out and around Gloucestershire, smarter and more respectful supply routes will have

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and the environment. 6. To encourage the efficient working of mineral resources. 7. To promote the maximum use of recycled materials in preference to non-renewable primary minerals, where possible. 8. To encourage more sustainable ways of transporting minerals, especially alternatives to haulage by road. 9. To promote closer working with neighbouring authorities to develop a consistent policy approach for the future planning of strategic mineral resources. The **strategic objectives** were tested against the 15 SA objectives. These received a combination of major positive, positive and neutral scores. As a consequence the revised strategic objectives for the Preferred Options stage of the MCS had to integrate all of the actions for which major positive and positive scores were awarded.	Particular attention will also be drawn to efficient and prudent working practices that support a reduction in site waste and the optimum and most appropriate use of minerals. Although road haulage is likely to remain the dominant form of transport, smarter supply chains will be in place. These include stricter haulage routes and more efficient practices, such as back hauling of materials to and from sites. Through this approach vehicle movements for minerals will be reduced on local roads leading to a reduction in vehicle emissions. This will also help curb local traffic growth, wear and tear on the road network, and reduce other adverse impacts such as noise, dust and road safety. Mineral working in Gloucestershire will act as a positive driver for protecting and enhancing the quality of environmental assets and designations such as the Cotswolds and Wye Valley AONBs. Through the process of mineral restoration, worked out mineral sites will be seen as a key resource for increasing biodiversity and geodiversity interest. They will also assist in expanding the knowledge	as noise, dust and road safety. Where mineral working takes place, amenity, health, quality of life and economic vitality will be paramount to the decision making process. Mineral working will act as a positive driver for protecting and enhancing the quality of environmental assets and designations such as the Cotswolds and Wye Valley AONBs and will also assist in expanding the knowledge of our archaeological past. Through the process of mineral restoration, worked out mineral sites will be seen as a key resource for increasing biodiversity and geodiversity whilst at the same time minimising risk of birdstrike. In particular the successful co-ordination of mineral management in the Upper Thames Valley (including the adjacent areas of Wiltshire and Swindon) will be crucial to successful regeneration and restoration of the landscape in this area. **SA Findings** The SA findings for the Vision were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, and summarised below: In general, the vision encourages	been applied. Impacts upon local and strategic roads will have been minimised by providing opportunities to reduce the frequency and length of haulage journeys. Where mineral development has taken place, minimising the adverse impacts on: – amenity; risks to health, well-being and quality of life; the economic vitality of other local businesses; the integrity and quality of the natural and historic environment; aviation safety caused by the risk of bird strike; and the risk of flooding, will have been highly influential in the decision making process. Furthermore, beneficial after-use opportunities resulting from the timely and effective restoration of minerals sites will have been maximised, to: - achieve enhancements in beneficial biodiversity; access to geological conservation interests; access to the countryside; the level and diversity of participation in leisure & recreational activities; the management of the water environment and reduced risks to water quality.

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	of our archaeological past. Finally, mineral restoration will be lauded as having positively steered the successful and co-ordinated regeneration of the Cotswold Water Park in Gloucestershire and the adjoining areas of Swindon and Wiltshire. It will also be recognised, as a key driver of change that will underpin future regeneration opportunities in the area." **SA Findings for MPO1** (as presented in the 2008 Preferred Options SA Non-technical Summary) The proposed vision is very comprehensive, thus it scores very well against the 15 SA Objectives, particularly in the medium to long term. There are no clear negative effects likely at this level of assessment and taking the vision as a whole. The vision contains a good balance between providing for the mineral need of society as a whole and for Gloucestershire, and ensuring that the issue of environmental capacity is considered. An important aspect of it is the focus on maximising the reuse of materials and the recycling of C&D wastes. This clearly accords with Government policy in MPS1	sustainable economic growth as required by the NPPF, and is likely to have a positive effect on all of the SA objectives. **Proposed Strategic 'Priorities'** In order to be compliant with the NPPF, the strategic objectives were referred to as strategic priorities. The objectives that were presented in the 2008 consultation were further revised to take account of national policy changes and also the comments received in response to that consultation. Changes reflective of comments include: a slight reordering of objectives; inclusion of a reference to sustainable transport in relation to reuse and recycling; rewording of the Environment strategic objective to be appropriate to all landscapes and to include a reference to the historic environment; the reclamation objective has been expanded to include references to specific criteria outlined in paragraph 143 of the NPPF, to make reference to enhanced environmental standards and to include a reference to minimising risk of birdstrike hazard; removal of reference to "worked-out" minerals sites; the transport objective has	The Plan Objectives have also been amended in the 2016 MLP Consultation Draft. As noted above, GCC has stated that all of the changes to the early part of the plan – vision and objectives represent a combination of taking into account previous consultation comments, the evolution of thinking about the plan's policies and what can realistically and feasibly be achieved, and a tighter adherence to the content of the NPPF and PPG. The original vision and objectives had not been heavily scrutinised with regards to the changes that have occurred following the shift from the suite of national PPSs and MPSs to the NPPF. **The Proposed Objectives state:** **Objective SR: Maximising the use of secondary and recycled aggregates** To promote the maximum use of recycled materials and secondary aggregates in preference to primary-land won minerals having regard to the viability and sustainability of transporting, handling and processing of such materials, including the avoidance of adverse impacts on local communities, the environment, and the ability to successfully achieve the restoration

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	and represents a clear sustainable way ahead for the minerals industry **The strategic objectives included in the Preferred Options (MPO2) were:** **Provision & S–pply -** To ensure that appropriate provision is made for the supply of minerals to meet national, regional and local requirements including the Gloucestershire apportionments of crushed rock and land-won sand & gravel. Full account must be given to – local environmental capacity; availability of workable and viable resources; and market conditions. **Reuse & Recy–ling -** To promote the maximum reuse and recycling of materials in preference to primary minerals, particularly where transportation is kept to a minimum and the handling and processing of recyclates will not have an adverse impact on the environment or prejudice site restoration. **The Enviro–ment -** To seek the protection, and where appropriate, the enhancement of land that could be affected by mineral working, which has been internationally, nationally, regionally and locally designated on environmental and	been expanded to take account of the transport impacts of restoration proposals, to make reference to avoiding the use of roads unsuitable for HGVs and highlight the potential need to mitigation to the strategic road network; Resource management – deletion of the word practicable; People – word minimise has been replaced with 'mitigate against'. **Strategic Priority 1: Reuse & Recycling** To promote the maximum reuse and recycling of materials in preference to the use of primary minerals (where specification will allow), particularly where transportation is sustainable or kept to a minimum and the handling and processing of recyclates will not have an adverse impact on the environment or prejudice site restoration. **Strategic Priority 2: Provision & Supply** To ensure that appropriate provision is made for the supply of minerals to meet national, and local requirements including the aggregates provision identified within the local aggregates assessment. Full account must be given to – local environmental capacity; availability of workable and viable resources; and market	of mineral sites. **Objective SR: Maximising the use of secondary and recycled aggregates** To promote the maximum use of recycled materials and secondary aggregates in preference to primary-land won minerals having regard to the viability and sustainability of transporting, handling and processing of such materials, including the avoidance of adverse impacts on local communities, the environment, and the ability to successfully achieve the restoration of mineral sites. **Objective RM: Effectively managing mineral resources** To manage the county's remaining mineral resources in a co-ordinated and efficient manner by ensuring other development does not unnecessarily sterilise mineral resources or adversely affect the operation of mineral infrastructure; and that where minerals are worked, they are put to their optimal use and that any waste generated is kept to a minimum. **Objective PS: Making provision for the supply of minerals** To ensure that a sufficient supply of minerals is provided that

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	landscape grounds. **P–ople -** To secure sound and enforceable working practices, which inimizinimise adverse impacts on local communities and businesses and will be systematically monitored. **Reclam–tion -** To secure the highest possible standards and quality of mineral restoration and aftercare for worked-out mineral sites, taking a spatial view of after use opportunities for – biodiversity, geodiversity, agriculture, public access, regeneration, contributing towards reducing climate change impacts, and ensuring aerodrome safeguarding. **Resource Manag–ment -** To manage the county's remaining mineral resources in a coordinated and efficient manner so as to ensure that future development will not result in mi inimizing onsation; that where minerals are worked, they are put to their most practicable and optimal use; and that the amount of waste produc inimizinimised. **Tran–port** - To reduce the impacts of hauling minerals by road and encourage more sustainable forms of transport, including necessary	conditions. **Strategic Priority 3: The Environment** To protect, and where appropriate, enhance, the quality of landscapes, habitats, heritage and other environmental assets, having full regard to their international, national or local importance. **Strategic Priority 4: People** To secure sound and enforceable working practices, which will mitigate against adverse impacts on local communities and businesses and will be systematically monitored. **Strategic Priority 5: Reclamation** To secure both enhanced environmental standards and the highest possible standards and quality of mineral restoration and aftercare for mineral sites at the earliest opportunity, taking a spatial view of after use opportunities for – biodiversity, geodiversity, agriculture (including safeguarding of best and most versatile agricultural land and safeguarding soil resources), native woodland, public access, regeneration, the historic environment, recreation, contributing towards reducing	contributes towards meeting local and national requirements having taken account of local environmental capacity, the availability of viable, workable or alternative resources, accessibility to necessary supporting infrastructure, and market conditions. **Objective ENV: Protecting the built and natural environment** To protect, and where opportunity exists, enhance, the quality of landscapes, habitats, heritage and other environmental assets, having full regard to their international, national or local importance and value. **Objective LC: Protecting the health and well-being of local communities** To avoid adverse impacts on local communities and businesses wherever it is practicable to do so and in all other circumstances, ensure that effective, sound and enforceable measures are put in place to successfully mitigate unacceptable adverse impacts. **Objective RA: Successfully restoring worked-out mineral sites** To secure the highest possible quality of mineral

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	improvements to infrastructure. **SA Findings for MPO2** (as presented in the 2008 Preferred Options SA Non-technical Summary) The 7 strategic objectives are detailed, comprehensive and focused on the significant issues that need to be addressed. Thus the majority of scores are positive to major positive against the 15 SA Objectives, particularly in the medium to long term. There are no clear negative effects likely at this level of assessment; neutral scores are given in the short term for SA Objectives 9 and 10. The strategic objectives are broadly in line with Government policy in MPS1, are clearly linked to the vision – pointing to sustainable ways ahead for the minerals industry – such as a focus on reuse and recycling rather than just primary extraction. Section 14 of the MCS Preferred Options paper clearly indicates how the objectives will be implemented and the levels of support and partnership working that will be required.	climate change impacts (including the impact of traffic) and ensuring aerodrome safeguarding, with particular regard to preventing an increase in birdstrike hazard to air traffic. **Strategic Priority 6: Resource Management** To manage the county's remaining mineral resources in a co-ordinated and efficient manner so as to ensure that future development will not result in mineral sterilisation; that where minerals are worked, they are put to their most optimal use; and that the amount of waste produced is minimised. **Strategic Priority 7: Transport** To reduce the impacts of hauling minerals by road and encourage more sustainable forms of transport, including necessary improvements to infrastructure. Where transportation by road is the only practicable option, roads unsuitable for HGVs will be avoided. Improvements to the existing strategic road network may be required to facilitate the transportation of minerals by HGV. **SA Findings** The SA findings for the strategic objectives were presented in	reclamation attainable at the earliest practicable opportunity, which will have enabled a successful balance of benefits to be achieved, including in respect of – protecting and enhancing landscape character, biodiversity, geo-diversity, agricultural resources, public access and recreation, and heritage assets; contributing to local economic growth; maintaining or improving resilience to flooding; and avoiding increased risk to aviation safety, particularly caused by bird hazard. **Objective MM: Efficient, effective and safe movement of minerals** To support the efficiency, effective and safe operation of the county's road networks by – encouraging the least amount of road haulage of minerals possible; use of the most suitable routes wherever it is practicably to do so; avoiding adverse impacts on the county's road networks where achievable; and in all other circumstances, ensuring that effective, sound and enforceable measures are put in place to successfully mitigate unacceptable adverse impacts. The SA findings for the Vision and Objectives are presented in

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		Appendix 5 and Chapter 5 of the 2014 SA Report, and summarised below: The Proposed Strategic Priorities are generally compatible with and supportive towards the SA objectives with a number of minor and significant positive effects identified (particularly for some of the economic and environmental objectives), and some mixed effects identified (particularly in relation to Strategic Priorities 1, 2 and 5). However, there is also no relationship between a number of the SA objectives and the Strategic Priorities.	Appendix 5 and Chapter 5 of this SA Report.
Presumption in favour of sustainable development			
Not specifically referred to.	Not specifically referred to.	A specific proposed policy was included at this stage to cover the presumption in favour of sustainable development due it being a key policy concept introduced by the NPPF in 2012. The Planning Inspectorate drafted a model policy on presumption in favour of sustainable development which was recommended for inclusion in all local plans.	This policy has now been removed from the 2016 MLP Consultation Draft, as GCC have stated that the proposed 'model' policy on the presumption in favour of sustainable development has been removed from the draft plan following advice received from the Planning Inspectorate (PINS) in March 2015. This was in response to a direct query raised about the need to continue including such a policy in local plans going forward.

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			The MPAs view is that no specific policy is necessary and that the presumption in favour of sustainable development is found either explicitly or implicitly in the draft MLP's policies.
Conserving mineral resources (safeguarding)			
ISSUE M3. Meeting Objective 1: Identifying, conserving and safeguarding Gloucestershire's finite mineral resources from unnece inimizing onsation by other forms of development. **(Option 1): Business as usual** Roll forward the existing general safeguarding policy in the Minerals Local Plan. As detailed in the Minerals Core Strategy Issues & Options Paper SA Report (September 2006) this option was considered to be broadly positive in terms of the tests against the SA Objectives. However **it was dropped**, as it did not fully accord with national policy in MPS1. It did not include Mineral Safeguarding Areas (MSAs), although it did have a Minerals Consultation Area (MCA) covering the Upper Thames Valley area.	**The Preferred Option relating to safeguarding was:** **MPO13 (Resource Management)** Preferred Option MPO13 supports the delineation of Mineral Safeguarding Areas (MSAs) for the county's mineral resources of limestone used as a crushed rock; sand & gravel; building stone and coal, which are considered to be of current and future economic or building conservation importance. It proposes the assessment of mineral resources to form part of a strategic policy for the MCS. In terms of delineating MSAs, this will take place in the future as part of the MWDF Proposals Map to accompany the Development Control Policies (DPD). Gloucestershire is a two-tier planning area, which already has a Mineral Consultation Area (MCA) in	The responses to the Preferred Options consultation in 2008 indicated that option MPO13 was the preferred approach to take forward. However, this was a framework for a policy approach which needed to be developed into policy options. There were three proposed policies relating to minerals safeguarding in the 2014 MLP Consultation Document: **Proposed Policy for Minerals Safeguarding Areas (MSAs)** **Proposed Standing Advice for implementation of the MSA Policy** **Proposed Safeguarding Policy for Minerals Infrastructure** In addition, between four and five individual options for delineating the MSAs for the following mineral	The 2016 MLP Consultation Draft now includes three draft policies relating to minerals safeguarding: **Policy MS01: Non-minerals development within Minerals Safeguarding Areas (MSAs)** **Policy MS02: Non-minerals development within Minerals Consultation Areas (MCAs)** **Policy MS03: Safeguarding mineral infrastructure** The MSAs and MCAs have been identified on the policies map, and Implementation Schedules for MSAs and MCAs are included in Appendix 2 and 3 respectively of the 2016 Consultation Draft. Policy MS01 and its Implementation Schedule essentially take forward the information that was contained in the Proposed Policy and the Proposed Standing Advice for MSAs

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(Option 2): Devise new policies that set out specific safeguarding criteria for particular mineral types such as natural building & roofing stone and brick-clays. This option scored well in the Issues & Options SA and was **effectively carried forward into the Preferred Options**. **(Option 3): Business as usual** Retain the existing Mineral Conservation Area policy for the sand and gravel resource in the Upper Thames Valley. **This option was effectively carried forward into the Preferred Options**. **(Option 4): Retain the existing Mineral Conservation Area** and highlight the potential for a review of Mineral Conservation Area coverage across the County. **This option was effectively carried forward into the Preferred Options**. **(Option 5):** Recommend the removal of the Upper Thames Valley Mineral Conservation Area. This option scored poorly in the Issues & Options SA, with a number of potentially negative effects	the Upper Thames Valley. Consequently, preferred option MPO13 proposes a review of the existing MCA along with the consideration of new MCAs for other parts of the county. The review will take place alongside the delineation of MSAs, and all future MCAs will form part of the MWDF Proposals Map. Preferred option MPO13 also supports the principle of prior-extraction of minerals, where new development is proposed. It will seek to deliver this in the future through suitable development control policies, which highlight specific prior-extraction criteria for certain locations, developments or mineral resources. The final part of option MPO13 is concerned with efficient mineral working – maximising value, usefulness and reducing waste. These matters will be covered by an overarching policy that will seek the highest value and usefulness of minerals and working practices that will minimise the amount of mineral waste being generated. **SA Findings for MPO13** (as presented in the 2008 Preferred Options SA Non-technical	resources were also identified in the MLP Consultation Document: • Carboniferous and Jurassic limestones. • Devonian and Carboniferous sandstones. • Unconsolidated and consolidated sand and gravel. • Carboniferous and Jurassic clays. • Coal. The options for delineating the MSAs generally proposed safeguarding the entire known resource, safeguarding parts of the resource area based on historical workings/age of geological formation/location of resource (e.g. Forest of Dean or Cotswolds etc.), safeguarding buffer zones of either 250m, 500m or 1km around existing and former quarries and other 'strategic resource areas'. These options were not intended necessarily to be alternatives to each other; instead, it was possible that the preferred option could include a combination of more than one of the options. Mineral Consultation Areas were not referred to.	in the 2014 Consultation Document, although there were more requirements for the non-minerals development to meet listed in the 2014 Consultation Document. The MSAs identified on the Key Diagram in Appendix 1 of the 2016 Consultation Draft show that GCC has selected the options that suggested safeguarding the entire resource. GCC have stated that entire areas containing known mineral resources of potential economic importance have been included within the county's MSAs. No evidence exists to give the MPA sufficient confidence to begin excluding mineral resource areas at this time. The focus of attention has been more on the approach to different types of development rather than mineral resources. Policy MS02 and its Implementation Schedule reintroduce MCAs, taking forward that element of MPO13 from the Minerals Core Strategy Preferred Options document (2008). The MCAs take forward the options for delineating MSAs that were to safeguard buffer zones of either 250m, 500m or 1km around existing and former quarries and other 'strategic resource areas' and goes with the buffer zone of 250m

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indicated. **It was dropped**, as it did not accord with the spirit of national policy in MPS1, which encouraged MPAs to utilise MCAs where two-tier local government exist and where there are proven mineral resources.	Summary) In the test against the SA Objectives this option is broadly positive / major positive with the policy seeking to gain the highest value and usefulness from mineral resources in Gloucestershire which are integral to building homes / sustainable communities. No significant negative impacts are envisaged at this level of broad assessment. Major positive effects are likely in terms of building sustainable homes and communities, safeguarding sites, conserving mineral resources and reducing waste to landfill – given that the policy promotes prudent and efficient working – minimising waste.	**SA Findings** The SA findings for the MSA proposed policies and delineating MSA options were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, and summarised below: The SA effects of the first two policies are the same, because the Standing Advice Proposed Policy simply seeks to ensure that the Policy for Mineral Safeguarding Areas is effectively implemented and adhered to, and its effects are based on the general principle of minerals safeguarding as are the effects of the Proposed Policy for MSAs. Mixed minor positive/minor negative effects are expected on half of the SA objectives from the Proposed Policies for MSAs and Standing Advice, including both of the social objectives (1 and 2), three of the economic objectives (3, 4 and 5) and four of the environmental objectives (8, 10, 12 and 17). Significant positive effects are expected for SA objectives 6 (conservation of mineral resources) and 11 (geodiversity) due to the principle of safeguarding ensuring that mineral resources will be	around all active mineral sites, plus sites with unimplemented planning permissions for mineral working, dormant minerals sites, and areas identified in the plan as specific sites, preferred areas and areas of search for future mineral working. GCC has stated that a 250m inclusion area around all MCAs represent a pragmatic approach put forward by the MPA that seeks to strike a balance between the competing interests of ensuring mineral workings are not unduly affected by incompatible non-minerals development and that land available for non-minerals development is not unduly restricted. This is largely based on the expertise of GCC Development Management officers and their handling of amenity issues/mitigation options. Policy MS03 takes forward the Proposed Safeguarding Policy for Minerals Infrastructure from the 2014 Consultation Draft, but adds criteria relating to whether the safeguarded mineral infrastructure site is no longer suitable or viable; or a suitable replacement mineral infrastructure site has been identified and permitted, rather than requiring the non-minerals

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		protected from unnecessary sterilisation by other development, by ensuring that minerals resources will be adequately and effectively considered in all land-use planning decisions. The Proposed Policy on safeguarding minerals infrastructure has almost all the same effects as the MSA and Standing Advice policies, except that it is unlikely to have an effect on SA objectives 5 (aerodrome safety) or 11 (geodiversity). This is because the location and nature of the proposed minerals infrastructure to be safeguarded (Table 1 on pages 31 and 32 of the MLP Consultation Document) is unlikely to affect aerodromes in Gloucestershire, and similarly, the nature of the infrastructure (rail heads, wharves, concrete batching plants etc.) will not contribute to or affect geodiversity. It is difficult to predict the SA effects of all of the different options for delineating the MSAs, as the same uncertainties exist with respect to whether non-minerals development proposals will come forward in these areas or if minerals extraction will occur prior to that development taking place.	development proposal to demonstrate that there will be no incompatibility between the two uses or that adequate controls can be implemented to ensure this to be the case. GCC has stated that this is because the re-worked policy is designed to offer greater clarity for decision makers (which will ultimately not be the MPA in Gloucestershire). Overall this element of the plan provides both policy and guidance on a range of circumstances that might arise in terms of the continued need to safeguarding and the ability to demonstrate that provision will be made elsewhere The SA findings for the three policies relating to safeguarding are presented in Appendix 5 and Chapter 5 of this SA Report.

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		Therefore, the sustainability effects under any of the options are likely to be the same as described above for the MSA proposed policy, although the effects are more likely to occur within the safeguarding areas. Thus, effects may be more widespread under the options which seek to safeguard the entire resource, and particularly for those resources that cover a wider area in the County (e.g. the Jurassic limestone which covers most of the eastern half of the County). As shown on the draft Key Diagram in the MLP Consultation Document (June 2014), if all five mineral resource types were safeguarded in their entirety, a large portion of the County would be covered by MSAs, apart mainly from the area around the M5 and River Severn corridor.	
Provision for Aggregates			
ISSUE M4. Meeting Objective 2: Ensuring that the appropriate provision is made to meet the local, regional and national demand for minerals from environmentally acceptable sources in Gloucestershire. **Aggregate Provision Options**	**The preferred options for Aggregates Provision included:** **Crushed–Rock - Preferred Options** **MPO3a** Preferred option MPO3a seeks to ensure sufficient provision is made to deliver the remaining local	There were five Aggregate Minerals Supply Strategic Policy Aims and Policies in Section 4 of the 2014 MLP Consultation Document: • Strategic Policy Aim for Primary Aggregate Minerals-Meeting the Need. • Strategic Policy Aim for Primary	The 2016 MLP Consultation Draft now includes four draft policies relating to aggregate provision in Sections 6, 8 and 9: **Policy SR01: Maximising the use of secondary and recycled aggregates** **Policy MW01: Aggregate**

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<u>Options for what provision should be made:</u> **(Option 1):** <u>Business as usual</u> Provision to meet the new local apportionment for Gloucestershire. **(Option 2):** Provision to meet the present level of production. **(Option 3):** Provision that takes account of potential constraints on reserves. **(Option 4):** A combination of Options 1, 2 & 3. In the SA test of these options at Issues & Options, Options 1 and 2 were broadly positive in the short to medium term or neutral in terms of its effects. In the longer term there were uncertainties. Option 2 was broadly positive (at worst neutral) in the short to medium term, but effects would be uncertain in the long term. Option 4 (the combination option) was favoured. Its effects were uncertain in the longer term, but in the short to medium term effects were either neutral, positive or major positive (for Objectives 6, 7, 8 & 9). However all of these options have (in part) been carried forward into the Preferred Options.	apportionment for crushed rock in Gloucestershire (presently 2006 to 2016). It also supports maintaining a 10-year landbank for crushed rock at the end of the guideline period at 2016. Delivering this option would be based on a 70:30 split of the provision requirement between the Forest of Dean and Cotswold crushed rock resource areas. This approach was previously used with the adopted Minerals Local Plan. Based on the assessment carried out in Technical Paper MCS-B, option MPO3a may result in new working areas having to be identified within the Forest of Dean resource area. These working areas may include: • A new lateral or deepening extension(s) to one or more of the existing crushed rock quarries; and / or • An increase in size of one or more of the undeveloped preferred areas set out in the adopted Minerals Local Plan; and / or • A new greenfield site. **SA Findings for MPO3a** (as presented in the 2008 Preferred	Aggregate Min–rals - Identifying Future Supply Areas. • Proposed Policy for Preferred Areas for Aggregates. • Proposed Policy for Proposals for the Working of Aggregates Outside of Preferred Areas. • Strategic Policy Aim for Alternative Aggregates. There were also 18 proposed sand and gravel and crushed rock site options presented under the Proposed Policy for Preferred Areas for Aggregates, split into four main areas as listed below. Some sites contain more than 1 parcel of land. These sites have been identified over the last couple of years when the Council has asked the minerals industry and landowners to submit sites which they consider are suitable for strategic aggregates extraction. In addition sites were allocated in the former 2003 MLP and any parcels of land from the plan which remain unpermitted have also been considered in this process. **Crushed Rock sites in Forest of Dean**	**provision** **Policy MA01: Aggregate working within site allocations** **Policy MA02: Aggregate working outside of site allocations** Policy SR01 is a new policy aiming to increase awareness of and to encourage greater uptake of recycled and secondary aggregates within new development. The previous Strategic Policy Aim for Alternative Aggregates focused on supporting the development of secondary and fixed recycled aggregates facilities in Gloucestershire. However, the 2016 MLP Consultation Draft now states that infrastructure matters related to the supply of secondary and recycled aggregates are dealt with through other local development plan policies covering the county, in particular Policy WCS 4 and WCS 11 in the adopted Gloucestershire Waste Core Strategy (WCS). Policies MW01 and MA01 take forward the Strategic Policy Aim for Primary Aggregate Minerals-Meeting the Need and Identifying Future Supply Areas, as well as the Proposed Policy for Preferred Areas

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<u>Options for how provision should be made:</u> **(Option 5):** No subdivision – make provision from all aggregate resources present across the County. **Parts of this option were dropped for crushed rock**, i.e. those references to retain the local, 70:30 split. (Note: There was no subdivision for sand & gravel). **(Option 6):** <u>Business as usual</u> Subdivide the amount of provision between the key aggregate resource areas in Gloucestershire. Option 5 effects in the medium to long term were uncertain. No significant negative impacts were likely in the short term, most of the potential impacts were considered to be neutral or positive. Option 5 was unlikely to have either negative or positive impacts on the environment but may fail to reflect market and end-use needs for different aggregate resources available in the County. The Business as usual option was broadly favoured in the SA test at Issues & Options as while there were uncertainties over some	Options SA Non-technical Summary) In the short to medium timeframe this option is broadly positive or neutral in terms of its effects. In the longer term there are a number of uncertainties and there are also uncertainties in the short / medium and long term against SA Objectives 5 – amenity protection, 8 – landscape / biodiversity issues, 9 – assets, 12 – reducing lorry impacts, 15 – reducing Climate Change impacts. It is most positive in terms of contributions to sustainable communities, employment and economic development opportunities in the county, promoting health and well-being and providing for the supply of aggregates and other minerals sufficient for the needs of society. It is not possible to fully appraise the impact of this policy in isol–tion - although in general terms making an appropriate contribution to supply of minerals is deemed positive – further detailed assessment of where and how the mineral will be extracted is essential. **MPO3b** Preferred option MPO3b looks to	CRFD1: Stowe Hill/Clearwell CRFD2: Drybrook CRFD3: Stowfield CRFD4: Hewelsfield **Crushed Rock sites in Cotswolds** CRCW1: Daglingworth CRCW2: Huntsmans CRCW3: Three Gates CRCW4: Oathill **Sand and Gravel sites in Upper Thames Valley** SGCW1: Dryleaze Farm/Shorncote SGCW2: Cerney Wick SGCW3: Horcott/Lady Lamb Farm SGCW4: Kempsford/Whelford SGCW5: Down Ampney SGCW6: Charlham Farm SGCW7: Wetstone Bridge SGCW8: Spratsgate Lane **Sand and Gravel sites in Severn Vale** SGTW1: Page's Lane SGTW2: Redpools Farm	for Aggregates. Policy MA01 lists the following allocations (all of which were considered at the previous stage): **Crushed–Rock - Forest of Dean** Allocation 01: Preferred Area at Stowe Hill/Clearwell Allocation 02 : Preferred Area at Drybrook Allocation 03 : Preferred Area at Stowfield **Crushed Rock – Cotswolds** Allocation 04 : Preferred Area at Daglingworth; Allocation 05 : Preferred Areas at Huntsman's **Sand and G–avel - Upper Thames Valley** Allocation 06 : Specific Site at Manor Farm, Kempsford Allocation 08 : Area of Search at Lady Lamb Farm, Fairford Allocation 09 : Areas of Search at Land between Kempsford & Whelford Allocation 10 : Areas of Search at Down Ampney and Charlham Farm **Sand and G–avel - Severn Vale**

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effects in the long term, in the short to medium term effects were positive or neutral. Major positive effects were likely in terms of SA Objectives 7 & 8. However, **parts of both options 5 and 6 were carried forward into the Preferred Options**. <u>Options for the consideration of undeveloped MLP areas:</u> **(Option 7):** Business as usual: Roll forward all undeveloped adopted Minerals Local Plan preferred areas before considering new sites within the Mineral Sites Allocation Development Plan Document. The SA test of this option at Issues & Options, found that in the short to medium tern there were likely to be positive or major positive effects in terms of the majority of the SA Objectives. **This option was carried forward into the Preferred Options**. **(Option 8):** Carry out a review of undeveloped Minerals Local Plan preferred areas along with a consideration of new sites within the Mineral Sites Allocation Development Plan Document. Although this option performed	adopt a more strategic / sub-regional approach to meeting the county's provision requirements. Its aim is to resolve the projected local shortfall in crushed rock provision by considering the merits of re-apportionment for Gloucestershire. This would be based on a comparative assessment between remaining crushed rock resources in the county and those within less constrained resource areas found within South Gloucestershire, North Somerset and / or Somerset. In delivering option MPO3b, environmental constraints, technical acceptability and economic viability issues within each subregional resource area, will need to be fully and comparatively assessed. A full subregional level Sustainability Appraisal and Appropriate Assessment of each resource area will also be required. Furthermore, due to the strategic nature of this option, the South West Regional Assembly (SWRA) as the RPB will need to take a leading role in undertaking the comparative assessment alongside the full co-operation of the respective minerals planning authorities **SA Findings for MPO3b** (as	**SA Findings** The SA findings for the five Aggregate Minerals Supply Strategic Policy Aims and Policies were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, and summarised below: There is a mix of potentially positive, negative and mixed effects arising from the policies, however, for a number of the SA objectives, negligible and no effects are expected to occur. No potentially significant positive or significant negative effects have been identified. Many of the identified effects are also uncertain, as the potential for effects will depend on the exact nature and design of sites, which would not be known until the planning application stage. Also, the proposed policies which have been identified to have potential negative effects on SA objectives will be supported by other policies within the MLP, when determining proposals, which should help to mitigate some of the negative effects identified. Furthermore, many of the policies (e.g. Proposed Policy for Preferred Areas) include criteria that need to be met and may also provide mitigation, for example: only	Allocation 07 : Preferred Area at Redpool's Farm, Twyning The reasons for selecting these ten allocations from the individual and combined parcels of land within the 18 Preferred Areas considered in the 2014 MLP Consultation Document are clearly set out in Appendix 1 of the 2016 MLP Consultation Draft. In order to comply with the SEA Regulations, that table of reasons for selecting or discounting particular parcels of land has been repeated in this Appendix, below this table. Policy MA01 also states that proposals within allocations must satisfy the detailed development requirements set out in the plan for each allocation (in Appendix 6 of the MLP Consultation Draft). These requirements include a number of measures that will provide mitigation for potential environmental and amenity impacts. Policy MA02 takes forward the Proposed Policy for Proposals for the Working of Aggregates Outside of Preferred Areas, but adds one new criterion that enables aggregate working outside of site allocations where they will facilitate

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reasonably well in the Issues & Options SA test, **it was dropped,** as under transitional arrangements the existing undeveloped preferred areas remained part of the development plan until formally replaced. As set out in Minerals Technical Evidence Paper MCS-A and B and the Preferred Options 'Spatial Strategy' the undeveloped preferred areas also needed to secure the potential provision requirements of the MCS. **(Option 9):** A phasing approach / strategy for determining the release of new aggregate reserves. The scores for this option in terms of the SA of the Issues & Options were 'mixed' with a reasonably high degree of uncertainty. **The option was dropped**, as the approach was not advocated in national policy in MPS1. This approach was potentially inflexible and could be contrary to MPS1 where it failed to release new aggregate reserves in the context of landbank requirements.	presented in the 2008 Preferred Options SA Non-technical Summary) This is a very difficult option to assess. In terms of considering the merits of re-apportionment for Gloucestershire, a detailed comparative assessment of the remaining crushed rock resources in the county and those within potentially less constrained resource areas within South Gloucestershire, North Somerset / Somerset is required. Within this assessment environmental constraints / capacity, technical feasibility and economic viability will have to be considered. The SA scores reflect a broad strategic consideration of the likely effects for Gloucestershire. Against the SA Objectives there are positive /major positive effects anticipated in terms of broad sustainable development / sustainable communities and in terms of the supply of aggregates. Many of the other scores are either positive or neutral. Uncertainties exist over employment issues in the longer term – quarrying jobs may be lost in Gloucestershire, and in terms of the amenity of local communities.	permitting operations where the need to maintain the aggregate landbanks is demonstrated and where the key development criteria of the MLP are satisfied. The SA findings for each of the 18 sites (including the individual land parcels within them) were presented in Appendix 6 and Chapter 5 of the 2014 SA Report, and summarised below: There is a mix of potentially positive and negative effects arising from the use of the site options for mineral extraction, however, for a number of the SA objectives, no effect is expected to occur. The potential for significant negative effects has only been identified for some of the sites on the SA objectives relating to biodiversity (SA Objective 7), landscape (SA Objective 8), cultural and recreational assets (SA Objective 10), historic environment and heritage assets (SA objective 12) and soil/land quality (SA Objective 14). Mitigation of the potentially negative effects could be achieved through implementation of good operational practices, and requiring certain surveys or detailed assessments to be undertaken as part of the planning application	the working of minerals prior to non-minerals development taking place in accordance with the safeguarding policy MS1. The SA findings for the four policies on aggregate supply and the 10 allocations are presented in Appendices 5 and 6 and Chapter 5 of this SA Report.

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	MPO3c Preferred option MPO3c proposes a local reassessment within the county resources of delivering Gloucestershire's local apportionment. This option would mean a more flexible approach to making provisi inimizinlising all of the county's existing permitted reserves and potential reserves within undeveloped preferred areas. This is in preference to focusing upon the limitations of specific resource areas, as identified within the adopted Minerals Local Plan. A potential result of this option would be a revised split of local provision requirements between the Forest of Dean and Cotswold resource areas. A realistic assessment of deliverability would need to be made regarding this option. However, it may also highlight a more fundamental review of the local apportionment, such as reapportionment for Gloucestershire as considered under option MPO3b. **SA Findings for MPO3c** (as presented in the 2008 Preferred Options SA Non-technical Summary) In the test of this option against the	process. These requirements are included within the policies in the MLP Consultation Document (June 2014), and will need to be included within any specific briefs for the sites that are ultimately selected for allocation in the MLP.	

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	SA Objectives, this option produces mixed, but not negative results. There are major positive effects anticipated in the short to medium term in terms of broad sustainable development / sustainable communities, and in terms of the supply of aggregates needed by society. Many of the other scores are either uncertain or neutral. The uncertainties in the longer term partially stem from questions over deliverability and whether the mineral resources are workable? Employment and economic development scores are broadly positive. In terms of amenity and environmental protection issues clearly further testing at the sites level will be necessary. **Sand & Gravel Prov–sion - Preferred Options** **MPO4a** Preferred option MPO4a seeks to ensure sufficient provision is made to meet the remaining local apportionment of sand & gravel for Gloucestershire (presently 2006 to 2016). It also supports maintaining a 7- year landbank for sand & gravel at the end of the guideline period at 2016. Based on the assessment carried		

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	out in the Technical Paper MCS-A, option MPO4a may result in additional areas for future mineral working having to be identified. **SA Findings for MPO4a** (as presented in the 2008 Preferred Options SA Non-technical Summary) Sand and gravel resources are used for a wide range of end-uses and infrastructure essential for modern life, but Gloucestershire does have a wide range of environmental assets which may be affected by extraction and transportation and there may be negative impacts on local amenity. However the issues for sand and gravel extraction are very different from hard rock quarries, and potentially there are significant landscape and biodiversity gains achievable. In the short to medium timeframe a number of SA scores are major positive in terms of contributions to sustainable communities, employment and economic development opportunities, promoting health and well-being and providing for the supply of aggregates and other minerals sufficient for the needs of society. In the longer term there are a number of uncertainties and there		

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	are also uncertainties in the short / medium and long term against SA Objectives 5 – amenity protection, 8 – landscape / biodiversity issues, 9 – assets, 12 – reducing lorry impacts, 15 – reducing Climate Change impacts. **MPO4b** Preferred option MPO4b looks to adopt a similar methodology to that of option MPO4a, by seeking to ensure sufficient provision is made to meet the local apportionment for Gloucestershire. However, it supports a longer landbank provision through to 2026, which is 10 years beyond the end of the guideline period. The aim of option MPO4b is to synchronise the local policy for sand & gravel provision with that of the spatial vision of the MCS and the emerging RSS. **SA Findings for MPO4b** (as presented in the 2008 Preferred Options SA Non-technical Summary) In terms of the SA Objectives, this option is scored identically to MPO4A because it is fundamentally similar other than supporting a longer landbank provision. However the uncertainties in the longer term are potentially more marked. (See		

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	comments for MPO4a). **MPO4c** Preferred Option MPO4c proposes a more strategic / sub-regional approach to sand & gravel provision. It offers more proactive support for resolving the projected shortfall in the sand & gravel provision across the region. Beyond the local requirements observed in options MPO4a and MPO4b, this option proposes a potential additional commitment for Gloucestershire. It is based upon maintaining appropriate, steady and consistent supplies of sand & gravel right across the strategic resource area of the Upper Thames Valley. This may result in Gloucestershire subsuming some of the local provision requirements for the neighbouring areas of Wiltshire and Swindon. The aim of option MPO4c is to expand existing joined-up working for minerals in the Upper Thames Valley. Through close coordination this may also support opportunities to develop a holistic spatial strategy for the area that goes beyond mineral developments. Delivering option MPO4c will require		

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	changes to the local apportionment for Gloucestershire. It may also require fundamental changes to working arrangements in the Upper Thames including a formal joint working policy and / or a change in how decisions are taken in the area. **SA Findings for MPO4c** (as presented in the 2008 Preferred Options SA Non-technical Summary) This option represents a more proactive approach for resolving the projected shortfall in sand and gravel provision in the Region. Scores against the SA Objectives are positive (not uncertain) in the long term –as the source of resource is known i.e. the Upper Thames Valley. The option is broadly positive / major positive (against 10 of the 15 SA Objectives). Uncertainties are recorded in terms of amenity issues (depends on sites?), flooding / hydrology and initiatives to reduce waste to landfill. On the flooding issue, the County Council is commissioning consultants to undertake a Strategic Flood Risk Assessment (SFRA) and it is expected that this will tie in with Wiltshire's SFRA. This is particularly important in the context of this		

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	wider strategic / sub regional option. **Sand & Gravel Loca–ions - Preferred Options** Preferred options MPO5a and MPO5b do not offer additional policy alternatives for the provision or supply of sand & gravel. Instead they consider locational options for delivering preferred options MPO4a, MPO4b or MPO4c. **MPO5a** Preferred option MPO5a proposes a more dispersed strategy for future sand & gravel working. W inimizing nising the strategic significance of the Upper Thames Valley resource area, it seeks to acknowledge the provision potential of the Severn Vale Corridor resource area. Where the spatial strategy indicates that new site allocations should be identified, the relative merits of potential sites within each resource area will be considered. **SA Findings for MPO5a** (as presented in the 2008 Preferred Options SA Non-technical Summary) In terms of the test against the SA Objectives, broadly positive impacts		

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	are anticipated from this more dispersed strategy for sand and gravel locations. The approach is flexible but still provides minerals resource needed for house building / infrastructure etc. There are uncertain impacts in terms of Objective 10 due to the fact that potential sites in the Severn Vale may be / are very prone to serious flooding. This could be negative in terms of additional costs / impacts associated with pumping and positive in terms of presenting opportunities for flood storage. These issues are likely to be addressed through Gloucestershire's SFRA. There are other uncertainties in terms of amenity issues, lorry traffic issues (will a dispersed strategy also disperse negative HGV issues?), reducing waste to landfill and reducing contributions to climate change. In terms of this option's potential for flood storage capacity, this clearly is one potentially effective form of mitigation against climate change induced flood events. The one major positive score in the SA test relates to providing supply. **MPO5b** Preferred Option MPO5b proposes a		

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	preference towards future sand & gravel working within the Upper Thames Valley resource area. Where new mineral site allocations are required in the future, these will be focused within the Gloucestershire section of this resource area. **SA Findings for MPO5b** (as presented in the 2008 Preferred Options SA Non-technical Summary) In terms of SA Objective 1, which is the objective which tests broad sustainability, the option is likely to have major positive effects in the medium to long term given the potential opportunities for joint working e.g. with Wiltshire / Swindon, building on economies of scale and a master planning process that takes account of a variety of issues over and beyond minerals planning. However there are a number of uncertainties in terms of flooding / hydrological issues, traffic impacts, reducing waste to landfill and reducing contributions to climate change. Flooding issues should be addressed through the SFRAs undertaken by Gloucestershire and Wiltshire. The reductions to landfill issue is a complex one due to		

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	questions over the classification of inert material as 'landfill' or 'reuse'.		
Provision for Clay			
ISSUE M4b. Ensuring that the appropriate provision is made to meet the local, regional and national demand for Clay Minerals **(Option 10):** Business as usual Roll forward the existing criteria based policy in the Minerals Local Plan. The scores for this option in terms of the SA of the Issues & Options were broadly positive / neutral in the short term, with some uncertainties in the medium to longer term. **This option was effectively carried forward into the Preferred Options**. However some changes were introduced to reflect detailed guidance set out in MPS1 Annex 2. **(Option 11):** Identify preferred areas for future clay working based on an assessment of resources, site capacities and the forecast future demand for clay. The SA of the Issues & Options questioned whether such a strategy	**The Preferred Option for Clay was**: **MPO6 Clay** Preferred Option MPO6 proposes two criteria-based policies – one for brick clays; and one for other engineering purposes. The brick clay policy will consider the acceptability of future clay extraction in relation to local brickworks and the exportation of clay minerals to strategic brickwork sites that may lie outside of the county. It will also consider the acceptability of mineral importation and on-site stockpiling. The other engineering policy will consider the acceptability of future clay extraction in the context of need, local environmental capacity; public amenity; transportation, restoration potential; and opportunities to reuse materials back on-site. **SA Findings for MPO6** (as presented in the 2008 Preferred Options SA Non-technical	There were seven Non-Aggregate Minerals Policies included in Section 5 of the 2014 MLP Consultation Document, including two in relation to clay: • Proposed Policy for Brick Clay. • Proposed Policy for Engineering Clay. Although no sites for clay extraction are proposed for the MLP, there was a policy in the 2003 adopted MLP (NE2) that needs to be replaced in order to ensure there is an adequate policy framework in place for any applications for clay extraction to be determined. Therefore, the two clay policies proposed criteria against which applications for clay extraction will be assessed. **SA Findings** The SA findings for the two Proposed Policies for Clay were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, and summarised below:	The 2016 MLP Consultation Draft still includes two draft policies relating to clay in Section 8: **Policy MW03: Clay for civil engineering purposes** **Policy MW04: Brick clay** Policy MW03 takes forward the Proposed Policy for Engineering Clay, however, some of the requirements in the Proposed Policy have not been included (i.e. requirements of the general minerals policies of the plan are satisfied, provision for the phased restoration of the site, and requirements for clay extraction at an existing mineral site). This is partly because cross-reference to other policies in the MLP is not considered necessary, but also because GCC has stated that it is unnecessary to seek a policy requirement to meet other named policies and / or their requirements in the plan. Removing these kinds of criteria is fundamental to the draft plan's application as outlined

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was necessary or sustainable. **The option was dropped**, as the evidence base did not suggest there was a sufficient provision issue over the MCS time period to purse the allocation of preferred areas for future working.	Summary) The effects are likely to be broadly positive; major positive scores are indicated against 6 of the SA Objectives across the short, medium to long term. As this is a criteria based approach benefits could be quickly realised. Clay is needed by brickworks in Gloucestershire, and bricks remain an essential component of modern house building / construction. Clay is also needed in considerable volumes for flood defense engineering and for landfill capping. Waste management is moving away from landfill as a disposal route but some landfill disposal (and associated restoration) disposal may remain necessary for some time into the future. This is a significant issue for Gloucestershire which has a large amount of void at the Wingmoor farm sites. In terms of SA Objective 12, negative impacts may result given the fact that sustainable transport opportunities may be limited and the policy accepts importation and stockpiling.	There is a mix of potentially positive effects (on the economic objectives), some negative effects (on amenity/health and soil) and mixed effects (on the environmental objectives) arising from the Clay policies, however, for a number of the SA objectives, negligible and no effects are expected to occur. Many of the identified effects are also uncertain, as the potential for effects will depend on the exact nature and design of sites, which would not be known until the planning application stage. Also, the proposed policies which have been identified to have potential negative effects on SA objectives will be supported by other policies within the MLP, when determining proposals, which should help to mitigate some of the negative effects identified. Furthermore, many of the policies include criteria that need to be met and may also provide mitigation.	under draft MLP paragraph 12.. Policy MW04 takes forward the Proposed Policy for Brick Clay, however, it now only requires proposals to demonstrate that they will make a contribution towards a landbank of brick clay, whereas the previous Proposed Policy included a requirement for no adverse environmental, amenity, transport or other impacts arising from the proposals. The previous policy also required proposals for manufacture of bricks outside the county to demonstrate that the proposal is the most sustainable option for the export supply of clay. This is because GCC has stated that it is unnecessary to seek a policy requirement to meet other named policies and / or their requirements in the plan. Removing these kinds of criteria is fundamental to the draft plan's application as outlined under draft MLP paragraph 12. Furthermore, the requirement to demonstrate how 'exporting' brick clay represents the most sustainable option, which is not in line with the more 'promotional' / 'supportive' approach being advocated within the NPPF under paragraph 146 bullet points 3 and 4 The SA findings for the two policies

Minerals Core Strategy Issues & Options (2005-2007)	Minerals Core Strategy Preferred Options (2008)	Minerals Local Plan Site Options and Draft Policy Framework Consultation Document (June 2014)	Minerals Local Plan Pre-publication Consultation Draft (September 2016)
			for Clay are presented in Appendix 5 and Chapter 5 of this SA Report.
Provision for Building Stone			
ISSUE M4c. Ensuring that the appropriate provision is made to meet the local, regional and national demand for Building Stones **(Option 12):** Business as usual Roll forward the existing criteria based policy in the Minerals Local Plan. **(Option 13):** Identify preferred areas for building stone based on an assessment of resources, site capacities and the forecast future demand for different building stone types. In the test of these options through the Issues & Options SA, one was not particularly favoured over another. Option 12 scored slightly better in terms of conserving resources, employment provision and contributing to the protection and enhancement of historic buildings etc. They were both broadly positive against a number of SA objectives. **Both options**	**The Preferred Options for Building Stone were**: **MPO7a** Preferred Option MPO7a looks to apply the existing building stone policy used in the adopted Minerals Local Plan – Policy NE1. This policy provides a clear decision making framework including four criteria for new building stone proposals – • A demonstration of 'need' for the stone; • The consideration of restoration benefits, heritage and the local economy; • An evaluation of crushing and screening of stone linked to aggregate production; and; • A review of other generic issues including local amenity, the environment and transportation. **SA Findings for MPO7a** (as presented in the 2008 Preferred	There were seven Non-Aggregate Minerals Policies included in Section 5 of the 2014 MLP Consultation Document, including one in relation to building stone: • Proposed Policy for Building Stone. Although no sites for building stone extraction were proposed for the MLP, there was a policy in the 2003 adopted MLP (NE1) that needed to be replaced in order to ensure there is an adequate policy framework in place for any applications for building stone to be determined. Therefore, the building stone policy proposed criteria against which applications for building stone extraction will be assessed. **SA Findings** The SA findings for the Proposed Policy for Building Stone were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, and summarised below:	The 2016 MLP Consultation Draft includes one draft policy relating to clay in Section 8: **Policy MW02: Natural building stone** Policy MW02 takes forward the Proposed Policy for Building Stone. The criteria are slightly reworded and reordered but essentially cover the same requirements as in the 2014 Consultation Document. The SA findings for MW02 are presented in Appendix 5 and Chapter 5 of this SA Report.

Minerals Core Strategy Issues & Options (2005-2007)	Minerals Core Strategy Preferred Options (2008)	Minerals Local Plan Site Options and Draft Policy Framework Consultation Document (June 2014)	Minerals Local Plan Pre-publication Consultation Draft (September 2016)
were carried forward into the Preferred Options.	Options SA Non-technical Summary) Against the SA Objectives broadly positive or neutral effects are likely. Major positive scores are indicated against SA Object–ve 9 -to protect conserve and enhance Gloucestershire's material, cultural and recreational assets including its architectural and archaeological heritage. Section 3.2 of this report states that despite the UK wide downturn in the production of building stone over the last 100 years or so, the local market has remained relatively constant, and there is a steady need from the building conservation / historic environment sector. Planning policies and controls are influencing this market through district local plans and technical planning guides where support is given for the use of natural local stone. Minor negative impacts are indicated against SA Objective 8 – the protection of the natural environment / biodiversity / landscape, due to the fact that some building stone quarries (particularly in upland AONB) can be both visible (breaking the scarp / ridgeline) and difficult to restore successfully.	There is a mix of potentially positive effects (on the economic objectives), some negative effects (on amenity/health and soil) and mixed effects (on the environmental objectives) arising from the Building Stone policies, with one significantly positive effect for the historic environment due to the provision of building stone to help conserve local buildings and the historic environment. Many of the identified effects are also uncertain, as the potential for effects will depend on the exact nature and design of sites, which would not be known until the planning application stage. Also, the proposed policies which have been identified to have potential negative effects on SA objectives will be supported by other policies within the MLP, when determining proposals, which should help to mitigate some of the negative effects identified. Furthermore, many of the policies include criteria that need to be met and may also provide mitigation.	

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	MPO7b Preferred Option MPO7b proposes to expand upon the existing building stone policy used in the adopted Minerals Local Plan. It seeks to introduce the concept of 'local distinctiveness' and to develop a more 'spatial' approach to the future management of the county's building stone resources. It sets out four additional elements – • A direct reference to the county's key natural building & roofing stone resource areas; • A link between the MCS's mineral safeguarding policy and delineated minerals safeguarding areas (MSAs) for natural building & roofing stone; Specific criteria for hybrid-building stone quarries; and • A link between rural economy strategies and relevant District Local Development Framework (LDFs) in the context of local employment opportunities. **SA Findings for MPO7b** (as presented in the 2008 Preferred Options SA Non-technical		

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	Summary) This option scores better than Option MPO7A. Positive or major positive scores are given against 9 of the 15 SA Objectives. In terms of employment and economic development the option scores well due to the links with Local Development Frameworks and rural economic strategies. Building stone quarries can be significant employers of local people in rural areas. As for MPO7a negative scores are given in terms of the potential landscape impacts. It depends on the sites and further testing may need to be done where appropriate through the SA of the Mineral Site Allocations DPD. **MPO7c** Preferred Option MPO7c proposes the same resource safeguarding approach as highlighted in option MPO7b. However, also looks to allocate specific sites for the future working of natural building & roofing stone. This option would provide a greater degree of certainty in terms of securing future provision. However, due to the complexity of resources in the county, preferred areas will only be considered where a sufficient		

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	evidence base has been made available. This would include the geological reliability of resources and a clear demonstration of the 'need' for the stone; or particular stone products at a local, regional, and / or national level. Information to this effect should be forthcoming from interested stakeholders, such as prospective quarry operators alongside English Heritage and local building conservation officers in respect of the 'need' issue. **SA Findings for MPO7c** (as presented in the 2008 Preferred Options SA Non-technical Summary) This option scores well due to the degree of certainty provided by the site allocation process. Against a number of the SA Objectives major positive effects are anticipated particularly in the medium to long term. Like the other building stone / roofing stone options it scores better against the objectives which have a social / economic focus, and less well in terms of the environmental ones e.g. Objective 8. In terms of the potential for successful restoration this option is favored over MPO7A & B as the sites approach will fully address		

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	end-use / restoration issues.		
Provision for Coal			
ISSUE M4d. Future Provision for Coal Minerals **(Option 14):** Business as usual Continuation of the current sequential test / criteria approach. This option scored well against a number of the SA Objectives at the Issues and Options Stage. **It was carried forward into the Preferred Options**. Note that the Issues & Options SA Report (2006) stated that other options have not been tested because the specific criteria are not specified. It may be possible to test other options if they come forward as a result of public consultation.	**The Preferred Option for Coal was**: **MPO8** Preferred Option MPO8 proposes to apply the existing policy framework for coal resources used in the adopted Structure Plan and Minerals Local Plan. It will include a clear presumption against opencast coal working and associated development within the Forest of Dean unless it is can be proved acceptable on local environmental, amenity and economic regeneration grounds, or where sufficient long-term local benefits can outweigh adverse impacts. However inimizinalised small-scale working under 'freeminers' rights, support will be given to this type development where it meets strict environmental standards and contributes to the cultural and industrial heritage of the area. **SA Findings for MPO8** (as presented in the 2008 Preferred Options SA Non-technical Summary)	There were seven Non-Aggregate Minerals Policies included in Section 5 of the 2014 MLP Consultation Document, including three in relation to coal: • Proposed Policy for Small Scale Coal Underground Mines. • Proposed Policy for Opencast Coal. • Proposed Policy for Re-working of Colliery Spoil Tips. The 2003 MLP included a policy framework for coal and hydrocarbons. Taking account of representations made to the earlier consultations and more recent up-to-date issues considered within the Minerals Technical Evidence Paper, the three policies above for coal were proposed, and an additional policy for conventional and unconventional hydrocarbons was also proposed: • Proposed Policy for Conventional and Unconventional Hydrocarbons. **SA Findings**	The 2016 MLP Consultation Draft includes one draft policy relating to Coal, and one draft policy for Oil and Gas in Section 8: **Policy MW05: Coal** **Policy MW06: Oil and Gas** Policy MW05 takes forward the three Proposed Policies for Coal into one brief policy, which covers any type of coal working. GCC has stated that this is because policy MW05 covers all coal working, including small-scale operations and / or the re-opening of previous working sites (see Draft MLP paragraph 185). The requirement relating to proposals being environmentally acceptable is retained, but some of the other requirements such as meeting other policies in the plan and contributing to the cultural and industrial heritage of the Forest of Dean are now in the supporting text. GCC has stated that this is because the relocation of these matters to the supporting text is reflective of the overall streamlining and simplification of policy being

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	In general the test of this option against the SA Objectives indicates that effects are likely to be broadly positive or neutral. The option scores particularly well in terms of Objective5 – protecting amenity. There is a potential negative impact in terms of Objective 15 – given the clear issues with coal burning and emissions to the atmosphere. But dependent on the scale of working and the scale of use. The adopted MLP policy reflects the national policy, which seeks to restrict the environmental consequences of open cast coal extraction on the local community. The coal resource of the Forest of Dean is a valuable natural resource and the area is defined by its industrial heritage related to coal extraction. The Free mining rights allow for small-scale coal extraction with minimal environmental consequences whilst maintaining a unique part of the Forest's cultural heritage which needs to be reflected in the MCS policies. However, the sustainable implications of large scale open cast coal extraction need to be fully assessed in a way outlined in the current MLP policies.	The SA findings for the four Proposed Policies for energy minerals were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, and summarised below: There is a mix of potentially positive effects (on restoration and cultural/recreational assets and impacts of lorry traffic), with some negative effects (on soil and climate change) and mixed effects (on biodiversity, geodiversity and landscape) arising from the three coal policies. However, for almost half of the SA objectives, negligible and no effects are expected to occur. The Proposed Policy for Hydrocarbons had more potential negative effects (on health/amenity, geodiversity, historic environment, air and soil quality, climate change and impacts of lorry traffic), but additional positive effects for the employment opportunities and economic development. Many of the identified effects are also uncertain, as the potential for effects will depend on the exact nature and design of sites, which would not be known until the	advocated throughout the plan. Furthermore, it is unnecessary to seek a policy requirement to meet other named policies and / or their requirements in the plan. Removing these kinds of criteria is fundamental to the draft plan's application as outlined under draft MLP paragraph 12.. Policy MW06 takes forward the Proposed Policy for Conventional and Unconventional Hydrocarbons and provides more detailed requirements than in the 2014 Consultation Document. This is because, as stated in the 2016 MLP Consultation Draft oil and gas developments must be given careful attention through the planning stages. The nature and significance of issues that might arise can be complex. The SA findings for MW05 and MW06 are presented in Appendix 5 and Chapter 5 of this SA Report.

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		planning application stage. Also, the proposed policies which have been identified to have potential negative effects on SA objectives will be supported by other policies within the MLP, when determining proposals, which should help to mitigate some of the negative effects identified.	
Strategy for Sites			
ISSUE M4d. A spatial strategy for ensuring that appropriate provision is made to meet the local, regional and national demand for minerals **(Option 15):** Business as usual 'Preferred Area' approach. This option was generally very positive in the SA test at Issues and Options. **It was effectively carried forward into the Preferred Options**. **(Option 16):** A combined preferred area and areas of search approach. In the SA of the Issues & Options this option produced broadly positive results in the short to medium term, but some uncertainty in the longer term. **It was unlikely that areas of search will form**	The MCS Preferred Options paper proposes in Section 6 (the Spatial Strategy) to roll forward the 'extensions' approach of the Structure Plan and Minerals Local Plan over the short-term. This is due to the issue of deliverability and a reflection of the level of infrastructure, which has already been invested into existing mineral sites. It is also an acknowledgement that many of preferred areas for future working, have yet to be developed, but are still available. However, at the time, it was not intended to include any specific site allocations in the Minerals Core Strategy, rather the MCS preferred options were intended to evolve into providing the parameters for how future working opportunities	See above under 'Provision for Aggregates'– the 2014 MLP Consultation Document proposed 18 site options for crushed rock and sand and gravel extraction, and these were appraised in Appendix 6 and Chapter 5 of this SA Report, and summarised above.	See above under 'Provision for Aggregates'– the 2016 MLP Consultation Draft now proposes 10 allocations for specific sites, preferred areas and areas of search for crushed rock and sand and gravel extraction, and these have been appraised in Appendix 6 and Chapter 5 of this SA Report.

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part of the MCS. The level of additional provision likely to be needed once all undeveloped preferred areas have been considered will be sufficiently low to be adequately covered through the identification of new preferred areas. Furthermore, the evidence base on remaining mineral resources is sufficiently robust and detailed to lead to the identification of deliverable preferred areas for future working. **(Option 17):** Giving preference to extensions to existing mineral workings before looking at new green field sites. This option was not particularly favoured in the Issues & Options SA due to uncertainties in the long term, and the fact that while there is an assumption that extensions to mineral sites have lower level of environmental impact than development on greenfield sites, such sites may not have been subject to a strategic sustainable appraisal prior to commencement, and in a modern planning context may not have provided the most sustainable location. **It was dropped as an overriding principle**, in favour of a more rigorous assessment including	would be allocated in a later mineral site allocations development plan document. Consequently, the 2008 Preferred Options SA Report did not appraise this aspect of the Preferred Options as there was no specific Preferred Option on preferred areas to appraise.		

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through SA and Habitat Regulation Assessment / AA work.			
Protecting environmental assets			
ISSUE M5. Meeting Objective 3: Protecting where possible the natural, historic and cultural assets of Gloucestershire **(Option 1):** Business as usual Retain environmental constraints hierarchy as a basis for protecting the environment from mineral development. In the SA of the Issues & Options, Options 1 & 2 were broadly positive in sustainability terms and were similarly scored against the objectives. **Parts of this option were dropped** due to the fact that the existing constraints hierarchy and associated policies did not accord with updated national policy set out in PPS7 and PPS9. **(Option 2):** Review the environmental constraints hierarchy in the context of the Regional Spatial Strategy and new government guidance. **This option was effectively carried forward into the Preferred Options**.	**The Preferred Option for the Environment was:** **MPO10** Preferred Option MPO10 seeks to continue the constraints hierarchy as applied within the adopted Minerals Local Plan. This hierarchy will be used within the MCS as the framework for future detailed policies within the Development Control Policies Development Plan Document. It will also assist in the identification and consideration of future mineral site allocations. However, to reflect updated national policy on environmental designations and minerals development the structure and content of the hierarchy will be amended. Furthermore, where new and appropriate designated assets exist these will be incorporated into the hierarchy. **SA Findings for MPO10** (as presented in the 2008 Preferred Options SA Non-technical Summary)	Seven out of the eight Proposed Policies in Section 6 of the 2014 MLP Consultation Document related to protection of natural, historical and cultural assets, as follows (excluding Sustainable Transport): • Proposed Policy for Flood Risk • Proposed Policy for Water Quality • Proposed Landscape Policy • Proposed policy for Mineral Working in the Green Belt • Proposed Policy for Biodiversity & Geodiversity • Proposed Policy for the Historic Environment • Proposed Development Management Criteria for the Historic Environment. • *Proposed Policy for Sustainable Transport* There were also the following proposed development management policies in Section 8 of the MLP Consultation Document	The 2016 MLP Consultation Draft includes eleven Development Management Policies in Section 10, nine of which relate to protection of natural, historical and cultural assets as follows: **Policy DM02: Cumulative Impact** **Policy DM04: Flood Risk** **Policy DM05: Water Environment** **Policy DM06: Biodiversity and Geo-diversity** **Policy DM07: Soils** **Policy DM08: Historic Environment** **Policy DM09: Landscape** **Policy DM10: Gloucester-Cheltenham Green Belt** **Policy DM11: Aerodrome safeguarding and aviation safety** These nine DM Policies generally take forward the requirements of

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	The environmental constraints hierarchy in the current Minerals Local Plan seeks to strike a balance between "…the need for the mineral and the environmental impact of mineral development." In this hierarchy the following are 'Principal Constraints': 1. Ramsar Sites, 2. Special Areas of Conservation, & 3. Special Protection Areas. 'Primary Constraints' are listed as 1. Areas of Outstanding Natural Beauty, 2. Sites of Special Scientific Interest, 3. National Nature Reserves, 4. Scheduled Ancient Monuments, 5. Nationally Important Archaeological Sites and Settings, 6. Listed Buildings/Conservation Areas, 7. Registered Historic Parks and Gardens, 8. Registered Battlefields, 9. Best and Most Versatile Agricultural Land 10. Water Environment. Secondary Constraints include: 1. Special Landscape Areas, 2. Local Nature Reserves, 3. Wildlife Corridors,	that were relevant to protection of natural, historical and cultural assets (those in *italics* are not relevant): • Proposed Policy for Mitigation of Environmental Effects • Proposed Policy for Ancillary Development • *Proposed Policy for Safeguarding Aerodromes* • Proposed Policy for Planning Obligations • *Proposed Policy for Borrow Pits* • Proposed Policy for Cumulative Impact • Proposed Policy for Soils • Proposed Policy for Public Rights of Way • Proposed Policy for Buffer Zones **SA Findings** The SA findings for all of the above Proposed Policies relating to protection of natural, cultural and historic assets were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, as summarised below. In general, the proposed	the relevant Proposed Policies in Sections 6 and 8 of the 2014 MLP Consultation Document, slightly updating some of the requirements to reflect national policy and guidance (e.g. on flood risk, green belt). However, there are some requirements that have moved from the policy into the supporting text, such as: - In considering the issue of cumulative impact, particular regard will be given to the following: 1. Environmental quality; 2. Social cohesion and inclusion; and 3. Economic potential (from DM02). GCC has stated the relocation of these matters to the supporting text is reflective of the overall streamlining and simplification of policy being advocated throughout the plan. It also ensures that the broad range of different issues that may constitute a cumulative impact are afforded appropriate and proportionate attention on a case-by-case basis - The use of sustainable drainage systems (from DM04). GCC has explained that the relocation of the SuDs requirement to the supporting text is representative of the overall streamlining and simplification of

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	4. Locally Important Archaeological Remains, 5. Locally important Historic Parks and Gardens, 6. Regionally Important Geological and Geomorphological Sites, 7. Green Belt. In the test against the SA Objectives there are major positive scores in terms of the objectives that seek to protect and enhance the environment, including the historic enviro–ment - (as clearly the above list is very comprehensive). There are neutral scores in terms of safeguarding sites, reducing the adverse impacts of lorry traffic, mineral restoration, and the objective to reduce waste to landfill.	development management policies are only likely to affect a limited number of the SA objectives as they are 'topic-specific' policies (e.g. flood risk, landscape, biodiversity etc.). Therefore, a number of negligible effects are identified for many of the SA objectives. Where the development management policies are likely to affect SA objectives, the effects are generally positive, with some significant positive effects identified. Only three minor negative effects are identified, all for SA objective 5 (aerodrome safeguarding), in relation to the policies covering Flood Risk, Biodiversity and the Cotswold Water Park.	policy being advocated throughout the plan. - Where a permanent loss of grades 1, 2, and 3a agricultural land can be demonstrated the operator will need to show that they can maximise the conservation of soils and that these will be used in the restoration of the proposal (from DM07). GCC has stated that this matter is adequately covered through the 1st bullet point of policy DM07 as part of the wider expectation that adverse impacts on soil quality need to be avoided or satisfactorily mitigated. The conservation of soils is a means of achieving the wider policy goal but is not necessarily the only option available. Furthermore, the relocation of 'solutions' into the supporting text is representative of the overall streamlining and simplification of policy being advocated throughout the plan. Some requirements have been removed altogether, such as: - A buffer zone must be retained between the mineral working and adjacent significant watercourses (from DM05). GCC has stated that there is no requirement for buffer

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			zones to be unilaterally imposed – firstly it is not an approach advocated within national policy and secondly, there is no local evidence that advises it should be specifically carried forward into the plan. Whilst 'buffer zones' may prove to be a viable and advantageous solution under certain circumstances, the plan seeks to offering sufficient flexibility for all possible solutions to come forward. The draft plan offers enough policy protection to achieve the same overarching aim resulting from imposing buffer –ones - that water resources and water-related environments are not adversely affected. See the requirements of policies DM05, DM06 and DM09 – particularly if landscaping matters might arise. - In relation to loss of high quality agricultural soil: the proposal will need to demonstrate the impact of the mineral working to the local economy (from DM07). GCC has stated that this matter is dealt with elsewhere in the plan for example see policy MW02 (bullet point three) and MW07 (bullet point 5). There is also no requirement in national policy or supported local evidence to undertake this sort of

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			assessment specifically in respect to soil quality / loss of agricultural grade land. The NPPF is more focused on 'headlining' the economic benefits of high quality agricultural land (see paragraph 112), which is likely to be achievable in a plan making context, through giving weight to its economic benefits as a constraint in allocating land. Furthermore, the second bullet of the policy offers the opportunity for applicants to highlight potential economic benefits of minerals development that outweigh the retention of high quality agricultural land. - There will be a presumption in favour of the conservation of the significance of designated heritage assets and their settings, and of those non-designated heritage assets with archaeological interest that are demonstrably of equivalent significance (from DM08). GCC has stated that the relocation of these matters to the supporting text is reflective of the overall streamlining and simplification of policy being advocated throughout the plan. It is also in response to the comments received from Historic England – which put forward significant policy

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			wording revisions. - The County Council will continue to work in partnership with the respective AONB Conservation Boards and/or Joint Advisory Committees to help deliver the vision and objectives of the AONB Management Plans and Minerals Local Plan (from DM09). GCC has stated that whilst not an unreasonable position to take for the MPA it is not strictly a matter relevant for the Draft MLP following tight adherence to national policy contained within NPPF paragraph 154. Furthermore, support for the delivery of AONB Management Plans is contained within policy MR01 under Draft MLP paragraph 387).. The SA findings for the Development Management Policies are presented in Appendix 5 and Chapter 5 of this SA Report.
Restoration of mineral sites			
ISSUE M6. Meeting Objective 4: Ensuring that mineral sites are restored to the highest possible standard that is capable of providing for a range of sustainable after-uses, and that	**The two Preferred Options for Restoration were:** **MPO12a** Preferred Option MPO12a proposes to include spatial opportunities	There were three proposed policies that related to the restoration of mineral workings in Gloucestershire in Section 7 of the 2014 MLP Consultation Document, as follows:	The 2016 MLP Consultation Draft includes one draft policy that relates to the restoration of mineral workings in Section 11: **Policy MR01: Restoration,**

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this is done as quickly as possible **(Option 1):** Business as usual Retain the existing policy approach for progressive restoration of mineral workings. In terms of the SA test of these three options at the Issues & Options stage, they were broadly positive and broadly similar. **This option was effectively carried forward into the Preferred Options**. **(Option 2):** Business as usual Retain existing policies in the Minerals Local Plan which encourage beneficial after-uses on a site-by-site basis. **Elements of this option were discarded** due to the fact that pre-determined restoration options would be either signposted or specifically set out in the Core Strategy. **(Option 3):** Alternative policies which look to achieve pre-determined restoration, aftercare and afteruse criteria for certain areas of the County. **This option was effectively carried forward into the**	resulting from minerals restoration into the MCS policy. It will accomplish this by referencing key spatial priorities, which may be supported by future mineral working within the county's mineral resources areas. **SA Findings for MPO12a** (as presented in the 2008 Preferred Options SA Non-technical Summary) In the test against the SA Objective this option is broadly positive but there are a number of uncertainties. The uncertainties in the longer term stem from the fact that the defined or stated spatial priorities could change over time, and there is hence a lack of flexibility. Major positive scores are indicated in terms of the promotion of sustainable development / communities / providing homes and the restoration of minerals sites (in the short to medium term). There are no significant negative effects indicated at this level of assessment. There are clearly major opportunities in Gloucestershire (particularly in the Cotswold Water Park / Upper Thames Valley) for habitat / biodiversity focused restoration. The sort of opportunities available	• Proposed Strategic Aim for the Cotswold Water Park • Proposed Restoration Policy • Proposed Development Management Restoration Policy **SA Findings** The SA findings for the three Proposed Policies relating to restoration were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, as summarised below. The majority of effects from policies relating to restoration policies would be uncertain as effects would be dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation. As they directly relate to the restoration of mineral sites, all three of these proposed policies are expected to have significant positive effects on restoration (SA objective 9), by restoring mineral sites to a high standard. In general, the policies are also likely to have positive effects on the other environmental objectives, as well as the social and economic objectives. However, as The Cotswolds Water	**aftercare and facilitating beneficial after-uses** Policy MR01 generally takes forward the requirements of the three Proposed Policies on restoration in Section 7 of the 2014 MLP Consultation Document. However, there are some requirements that have moved from the policy into the supporting text, such as: **-** Mineral workings should be reclaimed as soon as practicable after extraction has ceased in each phase in order to secure progressive reclamation across the site and to minimise the amount of land that is used for mineral extraction at any one time. - All of the requirements that were listed in the Proposed Development Management Restoration Policy. GCC has stated that this is because the relocation of these matters to the supporting text is reflective of the overall streamlining and simplification of policy being advocated throughout the plan. They are still largely covered through policy under the 2nd bullet point. The SA findings for MR01 are presented in Appendix 5 and

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Preferred Options.	are detailed in publications such as the RSPB's leaflet: Minerals Restoration Potential and in their Habitat creation handbook for the minerals industry. But there are also a wide range of other spatial opportunities for mineral site reclamation / restoration. **MPO12b** Preferred Option MPO12b seeks to introduce a policy link between mineral restoration and support for delivering key spatial priorities for the county. It will look to establish a core policy principle within the MCS with a commitment to produce more detailed guidance in the future. This may take the form of a Supplementary Planning Document (SPD); a dedicated section within a Mineral Site Allocations document; or form part of a wider spatial document such as an Area Action Plan (AAP). **SA Findings for MPO12b** (as presented in the 2008 Preferred Options SA Non-technical Summary) In the test against the SA Objectives this option is broadly positive and less uncertain in the longer term than MPO12a. Major positive scores are indicated in	Park is located within the safeguarding zone for RAF Fairford and if restoration to water use occurs a minor negative effect on the safety of the aerodrome due to potential bird strike was identified for the Proposed Strategic Aim for the Cotswold Water Park.	Chapter 5 of this SA Report.

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	terms of the promotion of sustainable development / communities / providing homes and the restoration of minerals sites (in the short to medium term). There are no significant negative effects indicated at this level of assessment. In terms of SA Objective 13 – the restoration of minerals sites, major positive effects are indicated in the medium to long term (a higher score than MPO12A) due to the fact that there is a greater degree of flexibility – the spatial priorities are not set in the Core Strategy but are introduced through Supplementary Planning Documents, Area Action Plans or the Mineral Site Allocations DPD.		
Protecting local communities			
ISSUE M7. Meeting Objective 5: Securing enforceable, sound working practices that minimise the adverse impacts of mineral developments on the local communities, the local economy and environment of Gloucestershire **(Option 1):** Business as usual Retain existing policies for protecting local communities as set	**The Preferred Option for People was:** **MPO11** Preferred Option MPO11 proposes a strategic amenity policy, which looks to highlight the importance and local amenity impacts within the policy framework set by the MCS. It will ensure that amenity is carefully considered by future	A number of the Proposed Policies in Section 6 of the 2014 MLP Consultation Document related indirectly to protection of local communities: • Proposed Policy for Flood Risk • Proposed Policy for Water Quality • Proposed Landscape Policy	The 2016 MLP Consultation Draft includes eleven Development Management Policies in Section 10, two of which relate specifically to protection of local communities as follows: **Policy DM01: Amenity** **Policy DM02: Cumulative Impact** Policy DM01 is a new policy that

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out in the Minerals Local Plan. In terms of the SA test of this option at the Issues & Options stage, the results were broadly positive but with some genuine areas of uncertainty identified. **Parts of the option were dropped** in that an overarching strategic amenity policy was proposed for the MCS. **(Option 2):** Revise policies for protecting local communities to include new factors such as cumulative impact and greater community involvement. In the Issues & Options SA test the results were broadly very positive. **(Option 3):** Business as usual Retain Settlement Protection Boundaries in the Upper Thames Valley. In the Issues & Options SA test the results for this option were broadly neutral. **(Option 4):** Remove Settlement Protection Boundaries in the Upper Thames Valley. In the Issues & Options SA test the results for this option were that there were a number of potentially negative impacts likely in terms of	mineral proposals and as part of the assessment process for future site allocations. It will also seek to provide a locational context to local amenity by signposting key areas in the county where local amenity safeguarding will likely be an issue in the future. **SA Findings for MPO11** (as presented in the 2008 Preferred Options SA Non-technical Summary) In the test against the SA Objectives this option is broadly positive or neutral. There are no significant negative impacts anticipated and major positive effects are envisaged in terms of Promoting sustainable communities, protecting health and well-being, protecting amenity and reducing adverse impacts of lorry traffic.	• Proposed policy for Mineral Working in the Green Belt • Proposed Policy for Biodiversity & Geodiversity • Proposed Policy for the Historic Environment • Proposed Development Management Criteria for the Historic Environment. • Proposed Policy for Sustainable Transport There were also the following proposed development management policies in Section 8 of the MLP Consultation Document that sought to protect local amenity (those in *italics* are not relevant): • Proposed Policy for Mitigation of Environmental Effects • *Proposed Policy for Ancillary Development* • *Proposed Policy for Safeguarding Aerodromes* • Proposed Policy for Planning Obligations • Proposed Policy for Borrow Pits • Proposed Policy for Cumulative Impact	was not included in the 2014 MLP Consultation Document, however, it reflects the Preferred Option for People that was included in the Minerals Core Strategy Preferred Options in 2008. It seeks to reduce noise, air pollution, vibration and visual intrusion impacts on local communities within Gloucestershire. Policy DM02 generally takes forward the requirements of the Proposed Policy for Cumulative Impacts in Section 8 of the 2014 MLP Consultation Document. However, as noted above, there are some requirements that have moved from the policy into the supporting text, such as: - In considering the issue of cumulative impact, particular regard will be given to the following: 1. Environmental quality; 2. Social cohesion and inclusion; and 3. Economic potential (from DM02). GCC has stated that this is because the relocation of these matters to the supporting text is reflective of the overall streamlining and simplification of policy being advocated throughout the plan. The SA findings for DM01 and DM02 are presented in Appendix 5 and

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tourist assets, health and amenity protection. **Appropriate parts of Options 2, 3 and 4 were carried forward into the Preferred Options**.		• *Proposed Policy for Soils* • Proposed Policy for Public Rights of Way • Proposed Policy for Buffer Zones **SA Findings** The SA findings for the all of the above Proposed Policies relating to protection of local amenity were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, as summarised below: In general, the proposed policies in Section 6 and 8 are only likely to affect a limited number of the SA objectives as they are 'topic-specific' policies (e.g. flood risk, landscape, biodiversity etc.). Therefore, a number of negligible effects are identified for many of the SA objectives. Where the development management policies are likely to affect SA objectives, the effects are generally positive, with some significant positive effects identified.	Chapter 5 of this SA Report.
Efficient working of minerals			
ISSUE M8. Meeting Objective 6: Encouraging the Efficient	**The Preferred Option for efficient working of minerals**	There was one Strategic Policy Aim regarding secondary and recycled aggregates in Section 4 the 2014	The 2016 MLP Consultation Draft now includes one draft policy relating to recycled and secondary

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Working of Mineral Resources **(Option 1):** Business as usual Retain the existing policy in the Minerals Local Plan that encourages the efficient use of minerals. In the Issues & Options SA test positive effects were envisaged against all SA Objectives. **(Option 2):** Adopt regional targets to assist with monitoring of the efficient use of minerals. The Issues & Options SA indicated that in the short to medium term the results were similar to Option 1 but that there were uncertainties in the longer term. **(Option 3):** Consider alternative strategies to ensure the efficient use of minerals, including the greater integration of minerals and waste core strategy policies. The Issues & Options SA indicated that positive / major positive effects could be anticipated and no negative impacts were indicated. **These options were effectively integrated where possible and carried forward into the Preferred Options**.	**was:** **MPO9 Reuse and Recycling** Preferred Option MPO9 looks to support a consistent and joined-up policy approach for the re-use and recycling of construction & demolition (C&D) wastes within Gloucestershire. It seeks to achieve this by following the locational strategy of the County's evolving Waste Core Strategy (WCS). However, in recognition of the potential opportunity to 'add value' at existing mineral sites, the preferred option also seeks to support ancillary recycling of materials, where there is sufficient environmental capacity to do so and where the wider spatial objectives of the substantive minerals operation, are not be compromised. **SA Findings for MPO9** (as presented in the 2008 Preferred Options SA Non-technical Summary) This option scores very well against the SA Objectives. The volume of C&D waste produced each year in Gloucestershire is significant (relative to other waste streams – See the Waste Core Strategy Preferred Options paper and related	MLP Consultation Document: • Strategic Policy Aim for Alternative Aggregates. **SA Findings** The SA findings for the Strategic Policy Aim regarding secondary and recycled aggregates were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, as summarised below. There is a mix of potentially positive, negative and mixed effects arising from the Strategic Policy Aim for Alternative Aggregates, however, for seven of the SA objectives, negligible and no effects are expected to occur. No potentially significant positive or significant negative effects have been identified. The positive effects relate mainly to the economic objectives and climate change, while the potential negative effects relate to environmental objectives. Many of the identified effects are also uncertain, as the potential for effects will depend on the exact nature and design of sites, which would not be known until the planning application stage. Also, the proposed policies which have been identified to have potential negative effects on SA objectives	aggregates in Section 6: **Policy SR01: Maximising the use of secondary and recycled aggregates** Policy SR01 is a new policy aiming to increase awareness of and to encourage greater uptake of recycled and secondary aggregates within new development. The previous Strategic Policy Aim for Alternative Aggregates focused on supporting the development of secondary and fixed recycled aggregates facilities in Gloucestershire. However, the 2016 MLP Consultation Draft now states that infrastructure matters related to the supply of secondary and recycled aggregates are dealt with through other local development plan policies covering the county, in particular Policy WCS 4 and WCS 11 in the adopted Gloucestershire Waste Core Strategy (WCS). The SA findings for SR01 are presented in Appendix 5 and Chapter 5 of this SA Report.

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	Waste Technical Evidence Papers for more details) and this policy seeks to put this 'waste' to better use. There are no significant negative impacts anticipated and positive / major positive effects are given against 11 or the 15 objectives. There are uncertain impacts in terms of reducing adverse lorry impacts on communities and the environment. This is due to the fact that, as already happens in Gloucestershire, C&D waste may be transported to peripheral quarries in the county for processing. But back-hauling could reduce these impacts.	will be supported by other policies within the MLP, when determining proposals, which should help to mitigate some of the negative effects identified.	
Maximising recycled materials			
ISSUE M9. Meeting Objective 7: Promoting the Maximum Use of Recycled Materials in Preference to non-Renewable Primary Minerals, where possible **(Option 1):** Business as usual Retain the Minerals Local Plan policy encouraging the use of recycled minerals to substitute for primary minerals. In the Issues & Options SA test this option was broadly positive.	**As above, the Preferred Option for efficient working of minerals was:** **MPO9 Reuse and Recycling** Preferred Option MPO9 looks to support a consistent and joined-up policy approach for the re-use and recycling of construction and demolition (C&D) wastes within Gloucestershire. It seeks to achieve this by following the locational strategy of the County's evolving Waste Core Strategy (WCS). However, in recognition of the	There was one Strategic Policy Aim regarding secondary and recycled aggregates in Section 4 the 2014 MLP Consultation Document: • Strategic Policy Aim for Alternative Aggregates. **SA Findings** The SA findings for the Strategic Policy Aim regarding secondary and recycled aggregates were presented in Appendix 5 and Chapter 5 of the 2014 SA Report, and are	As noted in the row above, the 2016 MLP Consultation Draft now includes one draft policy relating to recycled and secondary aggregates in Section 6: **Policy SR01: Maximising the use of secondary and recycled aggregates** The SA findings for SR01 are presented in Appendix 5 and Chapter 5 of this SA Report.

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However **the option was dropped** as RSS and MPS1 provided more detailed policy on delivering secondary and recycled aggregates. **(Option 2):** Revise the policy approach by improving policy linkages with the Waste Core Strategy. In the Issues & Options SA test this option was considered to be positive to major positive in terms of its effects. **This option was effectively carried forward into the Preferred Options.** **(Option 3):** Revise the policy approach to incorporate new regional targets. In the Issues & Options SA test this option was considered broadly positive in the short to medium term but with some longer term uncertainties. **This option was effectively carried forward into the Preferred Options**.	potential opportunity to 'add value' at existing mineral sites, the preferred option also seeks to support ancillary recycling of materials, where there is sufficient environmental capacity to do so and where the wider spatial objectives of the substantive minerals operation, are not be compromised. **SA Findings for MPO9** (as presented in the 2008 Preferred Options SA Non-technical Summary) As described in the row above.	summarised in the row above.	
Sustainable transport			
ISSUE M10. Meeting Objective 8: Encouraging More Sustainable Ways of Transporting Minerals Other Than by Road	**The Preferred Option for Sustainable Transport was:** **MPO14 Transport** Preferred option MPO14 proposes	There was one Proposed Policy in Section 6 of the 2014 MLP Consultation Document relating to sustainable transport: • Proposed Policy for Sustainable	The 2016 MLP Consultation Draft now includes one draft policy relating to transport in Section 10: **Policy DM03: Transport**

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(Option 1): Business as usual Retain the policy to encourage the most sustainable mode of transport for the movement of minerals. In the Issues & Options SA test this option was considered to be broadly positive or neutral. **The option was dropped** as the RSS and MPS1 provided more detailed policy on delivering sustainable transport for freight. **(Option 2):** Revise the current policy approach to reflect emerging regional policy concerning freight routing hierarchy for road haulage. In the Issues & Options SA test the likely effects were broadly positive and major positive for the majority of the SA Objectives (better scoring than Option 1). **This option was effectively carried forward into the Preferred Options.** **(Option 3):** Business as usual Retain the policy principles as set out in the MLP for safeguarding non-road transport infrastructure. In the Issues & Options SA test the likely effects were broadly positive and major positive for the majority of the SA Objectives but **the option was dropped** due to the RSS and MPS1 providing more	an overarching policy principle, which will look to support sustainable forms of transporting minerals – such as rail, sea and water, ahead of road haulage. However, where road transport represents the only viable option, priority will be given to mineral movements that utilise regional 'fit for purpose' haulage routes, where it is most practicable and of least environmental impact to do so. The regional routes designated within Gloucestershire will be clearly identified in the MCS. In terms of increased sustainable transport infrastructure, preferred option MPO14 will look to expand its local capacity for handling minerals. It will aim to achieve this through safeguarding existing railheads; rail depots; wharfage and inland waterways; and associated land, which could facilitate future expansion through regeneration initiatives, from other development. Spatial opportunities for more sustainable minerals transport in future will also be looked upon in the context of the spatial strategy and in particular as a factor in determining future provision requirements for minerals.	Transport **SA Findings** The SA findings for the Sustainable Transport Proposed Policy was presented in Appendix 5 and Chapter 5 of the 2014 SA Report, as summarised below. The Proposed Policy for Sustainable Transport is expected to have positive effects on a number of SA objectives. Minor positive effects are expected on health (SA objective 1) and the amenity of local communities (SA objective 2), as the policy restricts mineral developments that would generate adverse traffic impacts on residential amenity. The proposed policy may also have positive effects on a number of the environmental objectives as it encourages alternative modes of transport, requires developments to be supported by a Transport Statement or Transport Assessment, and will not permit development that cannot mitigate adverse impacts on the highway network (such as highway safety and operation, or the local environment). Minor positive effects are therefore expected on biodiversity (SA objective 7),	Policy DM03 takes forward and generally strengthens the requirements that were in the Proposed Policy for Sustainable Transport as well as the Proposed Policy for Public Rights of Way from the 2014 MLP Consultation Document. However, the requirement for Transport Statements or a Transport Assessment (TA) to support all mineral related proposals is no longer required and has moved from the policy into the supporting text. GCC has stated that as part of a general approach taken within the Draft MLP, all policy text have been rationalised and focused on the core aim of identifying what constitutes a minerals development proposal that should or should not be permitted. It represents a strict adherence to the position advocated within in the NPPF under paragraph 154. The need for TSs or TAs or any such relevant, comparable replacement in the future will no doubt be of significance to making decisions on transport-related matters. As such a specific reference is made to them in the supporting text. However, their provision in

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detailed policy on delivering sustainable transport infrastructure. Particular note was given to the potential allocation of sites for rail heads, wharfage and associated storage facilities. **(Option 4):** The identification of sites which could facilitate the non-road transport of minerals now or in the future. Again, in the Issues & Options SA test the likely effects were broadly positive and major positive for the majority of the SA Objectives, with no negative impacts envisaged. **This option was effectively carried forward into the Preferred Options.**	**SA Findings for MPO14** (as presented in the 2008 Preferred Options SA Non-technical Summary) In any minerals development, transport issues are generally significant. In terms of the SA Objectives the option scores well – as would be expected given that it is promoting more sustainable forms of minerals transportation. No significant negative impacts are anticipated and major positive scores are given in terms of broad sustainable development / communities, safeguarding sites (this includes railheads and wharfage), protecting health, safeguarding of local amenity, pollution prevention, reducing transportation impacts and reducing contributions to climate change.	landscape (SA objective 8), the historic environment (SA objective 12), and climate change (SA objective 18). In addition, as the policy directly addresses air quality (SA objective 15) and supports sustainable transport modes (SA objective 17), the positive effects on these objectives are expected to be significant.	themselves is not a determinant of acceptability of all minerals development proposals. Furthermore, not all minerals development proposals require a TS or TA as advised by NPPF paragraph 32 and the PPG section on Travel plans, transport assessments and statements in decision-taking. The SA findings for DM03 are presented in Appendix 5 and Chapter 5 of this SA Report.
Joint working and minerals			
ISSUE M11. Meeting Objective 9: Promoting Closer Working with Neighbouring Authorities to Develop a Consistent Policy Approach for the Future Working of Strategic Mineral Resources **(Option 1):** Business as usual	The joint working options were not carried forward into a specific Preferred Option, but were indirectly addressed through **Section 7 'Provision and Supply'** (Preferred options 3a-3c, 4a-4c, and 5a and 5b) **and Section 11 'Reclamation'** (Preferred options	Again, the joint working options were not carried forward into a specific proposed policy in the 2014 MLP Consultation Document.	Again, the joint working options were not carried forward into a specific proposed policy in the 2016 MLP Consultation Draft.

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Continuation of the current officer-led joint working approach. In the Issues & Options SA test the likely effects were broadly positive with major positive effects against a number of the SA Objectives. **(Option 2):** A more formal approach to joint working in the Upper Thames Valley supporting a greater degree of consistency in future mineral policies. In the Issues & Options SA test the likely effects were broadly positive with some uncertainties in the longer term. **Both these options were effectively carried forward indirectly into a number of the Preferred Options as discussed in the next column**.	MPO12a and MPO12b). These options and the SA findings are summarised above under the **Provision for Aggregates** and **Restoration of mineral sites** rows.		
SEA and SA for the MCS			
ISSUE M12. Strategic Environmental Assessment (SEA) and Sustainability Appraisal (SA) **Q12. In line with government guidance this Issues and Options paper has been subjected to a sustainability appraisal that examines its**	**SA/SEA** – no need for options to test at this stage. SA/SEA is being undertaken at each stage in the MCS/MLP development.	**SA/SEA** – no need for options to test at this stage. SA/SEA is being undertaken at each stage in the MCS/MLP development.	**SA/SEA** – no need for options to test at this stage. SA/SEA has been undertaken at each stage in the MCS/MLP development.

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likely social, environmental and economic impacts.			
Other issues			
ISSUE M13. Other issues? **Q13. Are there any other issues/options that this paper has not raised that you consider should be addressed?**	**Other issues** – no other issues were identified to assess at this stage.	**Other issues** – no other issues were identified to assess at this stage.	**Other issues** – no other issues were identified to assess at this stage.

Summary of reasons for selecting or discounting the land parcels considered within the 2014 MLP Site Options and Development Policies Framework Consultation Document, for inclusion as Specific Sites, Preferred Areas or Areas of Search within the 2016 MLP Consultation Draft

Site Name	SODPF Site Number	SODPF Parcel Number	Recommendation for the Draft MLP	Reasoning / Justification
Stowe Hill / Clearwell	CRFD1	A	To include all of Parcel B and the vast majority of Parcel A within the Draft MLP as a single 'Preferred Area' related to the existing Clearwell / Stowe Hill Quarry complex. Specific operational requirements should be included concerning the access arrangements and control over the overall output capacity.	Most of Parcel A and all of Parcel B are subject to a planning application submitted by the operator of the existing Clearwell / Stowe Hill Quarry. This confirms the mineral operator interest, which in conjunction with previous landowner interest, gives a degree of confidence as to site's desirability to be brought forward over the emerging plan period. Albeit potential constraints upon mineral working and other associated development do exist and bearing mind the mitigation and conditions in place over the current operations, there appears a reasonable prospect in principle that sufficient mitigation and / or constraint avoidance can be put in place. The decision to remove a small area of Parcel A is as a result of the existing mineral operation indicating no desire to work this land as part of the current planning application. This is likely due to matters of viability.
		B		
		C	Not to include within the Draft MLP	The existing mineral operator has indicated no desire to pursue mineral work across Parcel C over the time horizon of the emerging plan.
Drybrook	CRFD2	A	To include within the Draft MLP as a 'Preferred Area' with a modified boundary. Specific operational requirements should be included such as utilising the infrastructure and access arrangements for the existing Drybrook Quarry.	Parcel A has both landowner and mineral operator interest that affords a degree of confidence as to the site's desirability to be brought forward over the emerging plan period. Albeit potential constraints upon mineral working exist, there appears a reasonable prospect in principle that sufficient mitigation and / or constraint avoidance can still be put in place, which will also not prejudice the existing controls over the permitted operations at Drybrook quarry. The decision to remove a small area of Parcel A is as a result of an existing landowner indicating no desire for this land to be worked over the emerging plan period. Furthermore, as the allocation forms part of a former preferred area within the adopted MLP and lies in a locality that has not been subject to notable change since the existing plan was adopted, reasonable weight can be given to the fact it was deemed acceptable through the adopted plan's independent examination.
Stowfield	CRFD3	A	Not to include within the Draft MLP	There are considerable archaeological constraints contained within Parcel A, which render this undeliverable from a mineral working perspective.

		C	To include within the Draft MLP as a 'Preferred Area'. Specific operational requirements should be included such as utilising the infrastructure and access arrangements for the existing Stowfield Quarry.	Parcel C has landowner/mineral operator interest and is deemed likely to come forward during the plan period. Albeit potential constraints upon mineral working exist, there appears a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place in principle.
Hewelsfield	CRFD4	A	Not to include within the Draft MLP	There is no policy justification to include the Site CRFD4 within the emerging plan. It represents a standalone, greenfield mineral development that lies within a designated AONB. National policy is clear in seeking to discourage the maintenance of aggregate landbanks within AONBs therefore progressing this site would run contrary to this. Presently, there are sufficient alternative options available that are both potentially deliverable and have a more realistic prospect in principle of fully satisfying other key national policy requirements – such as making sufficient provision to meet demand over the time horizon of the emerging plan. Furthermore, no evidence has been presented to indicate that key issues such as access could practically be achieved.
Daglingworth	CRCW1	A	To include within the Draft MLP as a 'Preferred Area'. Specific operational requirements should be included such as utilising the infrastructure and access arrangements for the existing Daglingworth Quarry.	Site CRCW1 has both landowner and mineral operator interest that affords a degree of confidence as to the site's desirability to be brought forward over the emerging plan period. Albeit potential constraints upon mineral working exist, there appears a reasonable prospect in principle that sufficient mitigation and / or constraint avoidance can be put in place. Furthermore, as the allocation forms part of a former preferred area within the adopted MLP, reasonable weight can be given to the fact it was deemed acceptable through the adopted plan's independent examination.
Huntsman's	CRCW2	A	To Include within the Draft MLP as a 'Preferred Area' with a modified boundary. Specific operational requirements should also be included such as utilising the infrastructure and access arrangements for the existing Huntsman's Quarry.	A proportion of Parcel A has both landowner and mineral operator interest that affords a degree of confidence as to the site's desirability to be brought forward over the emerging plan period. Albeit potential constraints upon mineral working exist, there appears a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place. The decision to remove part of Parcel A is as a result of potential deliverability and policy conflict concerns. The removed area includes an existing quarry known as Tinkers Barn that is not linked operationally in anyway to the adjacent Huntsman's Quarry complex. It contains an extant permission, which is principally for the working of natural building stone that is only justified on these grounds. Some aggregate working is allowable but is strictly controlled, and is very much a secondary function[32]. As a consequence, if the removed area was to be allocated, this could risk diluting the well established planning controls on working that are in place and could prejudice the delivery of the overarching restoration strategy for the Huntsman's Quarry complex. It may also lead to the proliferation of larger-scale aggregate working within this part of the Cotswold AONB – a contrary position to national policy. In addition, there is an area in the northern part of Parcel A that surrounds a Schedule Monument,

[32] GCC Planning reference: 16/0012/CWMAJM | Extension of quarry incorporating variation of conditions 5 and 6 relating to planning consent 11/0019/CWMAJM at Tinkers Barn, Guiting Power.

				which is considered to be undeliverable from a minerals planning perspective.
		B	Not to include within the Draft MLP	The existing mineral operator and landowner have expressed no desire to pursue mineral work across Parcel B over the time horizon of the emerging plan.
		C	To Include within the Draft MLP as a 'Preferred Area'. Specific operational requirements should also be included such as utilising the infrastructure and access arrangements for the existing Huntsmans Quarry.	Parcel C has both landowner and mineral operator interest that affords a degree of confidence as to the site's desirability to be brought forward over the emerging plan period. It has also been subject to a scoping opinion in the recent past[33]. Albeit potential constraints upon mineral working exist, there appears a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place in principle.
Three Gates	CRCW3	A	Not to include within the Draft MLP	Site CRWC3 is wholly located within the Cotswold AONB and contains an existing quarry known as Three Gates. Operations run to an historic permission for the working of natural building stone, which has not been worked for some time and is justified only on these grounds. Some aggregate working is allowable but is strictly controlled, and is very much a secondary function to aid safe and efficient operations. To allocate CRWC3 would risk diluting the well established planning controls on working that are in place and could prejudice the delivery of any future agreeable restoration strategy It could also lead to the proliferation of larger-scale aggregate working within this part of the Cotswold AONB – a contrary position to national policy.
Oathill	CRCW4	A	Not to include within the Draft MLP	Site CRWC4 is wholly located within the Cotswold AONB and contains an existing natural building stone quarry known as Oathill that recently received permission for an extension[34]. Whilst mineral operations are only justified to support natural building stone supplies, some aggregate working is allowable but is strictly controlled, and is very much a secondary function to aid safe and efficient operations. To allocate CRWC4 would risk diluting the well established planning controls on working that are in place. It could lead to the proliferation of larger-scale aggregate working within this part of the Cotswold AONB – a contrary position to national policy.

[33] GCC Planning reference: 14/0102/SCOPE | Scoping request for a proposed revised working scheme and the extension of mineral workings at Huntsman's Quarry, Naunton
[34] GCC Planning Reference: 14/0101/CWMAJM | Extension to the existing quarry at Oathill Quarry, Temple Guiting

Dryleaze Farm / Shorncote	SGCW1	A	Not to include within the Draft MLP	There is currently no mineral operator interest in pursuing SGCW1 over the time horizon of the emerging plan. Furthermore, the estimated yield, which is presently unknown, is unlikely to be significant enough to justify allocation by virtue of the negligible contribution it would likely make, to maintaining the county's sand & gravel landbank. SGCW1 also lies within an area that has already been extensively worked in the past and, which is close to transition from a mineral operation to a site under restoration. Nevertheless, in the event it is deemed practicable and other potential site-related constraints can be overcome, the working of SGCW1 could be sought through the alternative policy justification afforded to Draft MLP MA02 – which recognises those circumstances where mineral working might be acceptable outside of the plan's allocations.
Cerney Wick	SGCW2	A	Not to include within the Draft MLP	Site SGCW2 presents notable deliverability challenges. It is currently under multiple landowner ownership and there is no proposed co-ordination land management strategy for mineral working purposes. There is also no mineral operator interest to purse it over the time horizon of the emerging plan. Furthermore, the estimated yield has not been supported by evidence and it is highly questionable as to whether it is sufficient to justify allocation by virtue of the negligible contribution it may make, to maintaining the county's sand & gravel landbank. Nevertheless, in the event it is deemed practicable and other potential site-related constraints can be overcome, the working of SGCW2 could be sought through the alternative policy justification afforded to Draft MLP MA02 – which recognises those circumstances where mineral working might be acceptable outside of the plan's allocations.
Horcott / Lady Lamb Farm	SGCW3	A	To Include within the Draft MLP as an 'Area of Search'.	Parcel A has landowner interest that affords a limited degree of confidence as to the site's deliverability over the emerging plan period. However, this is somewhat diluted by the fact it is not matched by mineral operator interest at this time. Furthermore, there is only limited evidence as to the potential achievable yield, which is not unsubstantial, but still needs to be addressed. Nevertheless, where possible constraints on mineral working exist, there appears a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place in principle. In addition, the parcel forms part of a former preferred area within the adopted MLP and therefore reasonable weight can be given to the fact it was deemed acceptable through the adopted plan's independent examination. On balance the recommendation is for the parcel to become an Area of Search.
		B	Not to include within the Draft MLP	There is currently no mineral operator interest in pursuing Parcel B over the time horizon of the emerging plan. The parcel is also under multiple land ownership, with a number of landowners not wishing to see it worked at this time. Nevertheless, in the event this matter can be overcome and practicalities and other potential site-related constraints can be resolved, the working of Parcel B could be sought through the alternative policy justification afforded to Draft MLP MA02 – which recognises those circumstances where mineral working might be acceptable outside of the plan's allocations.

Kempsford / Whelford	SGCW4	A	Not to include within the Draft MLP	Parcel A has mineral operator interest. However, it is highly questionable as to whether it is sufficient to justify allocation by virtue of the negligible contribution it may make, to maintaining the county's sand & gravel landbank. Nevertheless, in the event it is deemed practicable and other potential site-related constraints can be overcome, the working of SGCW2 could be sought through the alternative policy justification afforded to Draft MLP MA02 – which recognises those circumstances where mineral working might be acceptable outside of the plan's allocations.
		B	To Include within the Draft MLP as part of an 'Area of Search' to be known as Land between Kempsford and Whelford	Parcel B has landowner interest that affords a limited degree of confidence as to the site's deliverability over the emerging plan period. However, this is somewhat diluted by the fact it is not matched by mineral operator interest at this time. Furthermore, there is no evidence as to achievable yields, albeit the underlying geology is favourable. This should be addressed. Nevertheless, where possible constraints on mineral working exist, there appears a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place in principle addition, the parcel forms part of a former preferred area within the adopted MLP and therefore reasonable weight can be given to the fact it was deemed acceptable through the adopted plan's independent examination. On balance the recommendation is for the parcel to become an Area of Search.
		C	To include within the Draft MLP as a 'Specific Site'. Specific operational requirements should be included such as utilising the infrastructure and access arrangements for the existing Manor Farm Quarry.	Parcel C has recently been subject to a planning application for sand and gravel working[35]. The proposal has sought to address possible minerals planning constraints associated with this parcel. In May 2016, the County Council Planning Committee considered that sufficient information had been presented to approve the application subject to the completion of a Section 106 legal agreement to secure off-site monitoring of ground and surface water levels and bird hazard management. As a consequence, the parcel posses the highest possible prospect of being delivered and is recommended as a Specific Site. *In the event the legal agreement for the current planning application can be completed the Specific Site will be removed from the emerging plan as all relevant matters will have been satisfied.*

[35] GCC Planning Reference: 13/0097/CWMAJM | Extension of sand and gravel extraction and associated activities at Manor Farm Quarry, Washpool Lane, Kempsford

		D, E, F	To include within the Draft MLP as part of an 'Area of Search' to be known as Land between Kempsford and Whelford	Parcels D, E and F have landowner interest that affords a limited degree of confidence as to their deliverability over the emerging plan period. However, this is somewhat diluted by the fact it is not matched by mineral operator interest at this time. Furthermore, there is no evidence as to achievable yields, albeit the underlying geology is favourable. This should be addressed. Nevertheless, where possible constraints on mineral working exist, there appears a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place in principle. In addition, the parcels forms part of a former preferred area within the adopted MLP and therefore reasonable weight can be given to the fact it was deemed acceptable through the adopted plan's independent examination. On balance the recommendation is for the parcel to become an Area of Search.
Down Ampney	SGCW5	A, B, C	To include in Draft MLP as part of an 'Area of Search' to be known as Down Ampney and Charlham Farm.	All of the parcels of land at Down Ampney and Charlham Farm are now under a different land owner since their initial consideration for inclusion under the previous consultation in 2014. Whilst there has been a change in ownership, broad interest remains in facilitating some mineral working in the future as part of an overall estate strategy. Previously land at Down Ampney (Parcel A) was subject to a planning application for mineral working[36]. However, this proposal has not been progressed. The application was eventually disposed of in summer 2015. Furthermore, mineral operator interest is also no longer clear. There is no longer a publicly confirmed preferred operator in place. In terms of the Charlham Farm (Site SGCW6) no additional supporting evidence has been submitted and no indication has been forthcoming as to when this area may be looked at for working in the future. On balance, whilst the underlying geology is deemed favourable to potentially make a very significant contribution to maintaining the county's sand & gravel landbank, and there is some indication there is a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place in principle, the lack of evidence on deliverability grounds, means that allocating Areas of Search may be the most appropriate approach thus far.
Charlham Farm	SGCW6	A		
Whetstone Bridge	SGCW7	A	Not to include within the Draft MLP	Planning permission for sand & gravel working has been granted at Site SGCW7 since the last Site Options consultations in 2014 and 2015[37]. The allocation therefore now forms part of the sand & gravel landbank and will be reported as such when 2015 data is published.

[36] GCC Planning Reference: 09/0050/CWMAJM | The winning and working of sand and gravel, the construction of a new road access onto the C124 (proposed Eastern Spine Road), a bridge crossing of the Ampney Brook, temporary conveyor gantry crossing of the C124, construction and operation of a concrete batching plant, aggregate bagging plant and associated ancillary buildings, structures and operations, demolition and recycling of a concrete runway, with restoration to agriculture, woodland, amenity and nature conservation in land to south & south east of Down Ampney

[37] GCC Planning Reference: 2/0015/CWMAJM | Progressive extraction and processing of Sand and Gravel with restoration to Agriculture, Ponds, Nature Conservation including reconstruction of the Thames and Severn Canal using imported inert fill at Whetstone Bridge Farm, Down Ampney.

Spratsgate Lane	SGCW8	A	Not to include within the Draft MLP	Planning permission for sand & gravel working has been granted at Site SGCW8 since the last Site Options consultations in 2014 and 2015[38]. The allocation therefore now forms part of the sand & gravel landbank and will be reported as such when 2015 data is published.
Page's Lane	SGTW1	A, B, C	Not to include within the Draft MLP	Parcels A and B have landowner and mineral operator interest. However, both parcels present notable deliverability challenges. Whilst minerals have been worked nearby in the past, latterly it has been subject to a number of refused planning proposals[39] (it is also noted that Parcel A is currently subject to a further application for mineral working[40]). Amenity and incompatibility with other existing neighbouring and / or nearby land uses have featured highly as key grounds for concern. At present no counter evidence has been presented to suggest that potential site constraints can be satisfactorily mitigated or avoided. Consequently, the recommendation is not to include the parcels as an allocation. Nevertheless, in the event it is deemed practicable and other potential site-related constraints can be overcome, the working of Parcels A and B could be sought through the alternative policy justification in the future as set out under Draft MLP MA02 – which recognises those circumstances where mineral working might be acceptable outside of the plan's allocations. In addition, there is no landowner interest in pursing Parcel C for mineral working at this time.
Redpool's Farm	SGTW2	A, B, C, D	To Include within the Draft MLP as a 'Preferred Area' with a modified boundary.	All parcels have landowner and mineral operator interest that affords them a degree of confidence as to the site's desirability to be brought forward over the emerging plan period. Albeit potential constraints upon mineral working exist, there appears a reasonable prospect that sufficient mitigation and / or constraint avoidance can be put in place. A small area on the north eastern boundary of Parcel D has been removed. It is not under the control of the landowner that has shown an interest in allowing mineral working to take place in principle.

[38] GCC Planning Reference: 09/0014/CWMAJM | Progressive extraction and processing of sand and gravel with restoration using imported inert fill to a mix of wetland, grassland and recreational use, together with replacement visitor parking and access for the Keynes Country Park at Land East Of Spratsgate Lane, Shorncote.

[39] Notable refusals around Page's Lane include: - 13/0017/TWMAJM *(refused in 2013) (* T/00/5533/0934/FUL *(refused in 2003)*; T/99/5533/0259/FUL *(refused in 1999)*; and T.5533/K *(refused in 1986 and appeal dismissed in 1987)*

[40] GCC Planning Reference: 15/0088/TWMAJM | Extraction of sand and gravel and restoration to agriculture, amenity and nature conservation use. Resubmission following refusal of 13/0017/TWMAJM dated 16.10.2014 at Land Adjacent To Pages Lane, Twyning.

Appendix 3
Review of relevant plans, policies and programmes

INTERNATIONAL			
EU SEA DIRECTIVE 2001 (2001/42/EC)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Provides for a high level of protection of the environment and contributes to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.	The Directive must be applied to plans or programmes whose formal preparation begins after 21 July 2004 and to those already in preparation by that date.	Develop policies that take account of the Directive as well as more detailed policies derived from the Directive at the national level.	Requirements of the SEA Directive must be met in Sustainability Appraisals.
THE WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT – JOHANNESBURG 2002 – COMMITMENTS ARISING FROM THE SUMMIT			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Sustainable consumption and production patterns. • Accelerate shift towards sustainable consumption and production – 10 year framework of programmes of action. • Reverse trend in loss of natural Resources. • Renewable Energy and Energy Efficiency. • Urgently and substantially increase Global share of renewable energy.	No targets or indicators, however actions include: • Greater resource efficiency. • Support business innovation and take up of best practice in technology and management. • Sustainable consumer consumption and procurement. • Creating a level playing field for renewable energy and energy efficiency. • New technology development.	The MLP should encourage greater efficiency of resources. Plans should acknowledge the importance of protecting biodiversity. They should consider the maintenance of good air quality, the measures that can be taken to improve it and encouragement to reduce vehicle movements.	The SA should include objectives that broadly cover the action areas. Greater resource efficiency is key.

• Significantly reduce the rate of biodiversity loss by 2010.	• Push on energy efficiency.		
EU AIR QUALITY FRAMEWORK DIRECTIVES			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The 6th EAP identifies four priority areas: • Climate Change • Nature and Biodiversity • Environment and Health • Natural Resources & Waste.	No relevant key targets.	The MLP should consider its relationship with the priority areas.	The SA should consider its relationship with the priority areas.
EU SEVENTH ENVIRONMENTAL ACTION PLAN TO 2020			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The EU's objectives in implementing the programme are: • to protect, conserve and enhance the Union's natural capital; • to turn the Union into a resource-efficient, green and	No targets or indicators.	Develop policies that take account of the Directive as well as more detailed policies derived from the Directive contained in the NPPF.	Include sustainability objectives to protect and enhance the natural environment and promote energy efficiency.

competitive low-carbon economy; • to safeguard the'Union's citizens from environment-related pressures and risks to health and wellbeing; • to maximise the benefits of the'Union's environment legislation; • to improve the evidence base for environment policy; • to secure investment for environment and climate policy and get the prices right; • to improve environmental integration and policy coherence; • to enhance the sustainability of the'Union's cities; • to increase the Union's effectiveness in confronting regional and global environmental challenges.			
EU DRINKING WATER DIRECTIVE (98/83/EC)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Provide for the quality of drinking	The standards in the Directive are	Plans should clearly recognise that	The SA Framework should consider

water throughout the EU.	legally binding.	minerals development can impact upon drinking water quality and should include policy measures to protect these resources.	water quality.
EU WATER FRAMEWORK DIRECTIVE (2000/60/EC)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The WFD sets a framework for the long-term sustainable management of water resources. It establishes a river catchment structure for the management of all inland and coastal waters including groundwater.	All rivers must be of 'good' quality by 2015, although this has yet to be defined. EA publishes substantial information on river quality. Develop trend or target indicators based on these.	Include policies which promote water quality in line with the Directive. Many of the objectives will be achieved through River Basin Management Plans. Give consideration to the water needs of wetland areas. Through the–plan - promote the protection of Natura 2000 sites. Consider that wetland creation (after-use) may impose obligations under the WFD.	Check to ensure that the objectives of the Framework Directive are reflected in the SA Framework – The conservation and protection of groundwater, rivers and lakes in the county and bordering catchments needs to be included in the assessment of objectives. Consider specific objectives for the Cotswolds Water Park.
EU BATHING WATER QUALITY DIRECTIVE (2006/7/EC)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The revised Bathing Water Directive entered into force in March 2006. The overall objective of the revised Directive remains the protection of public health whilst bathing.	There is a requirement for all bathing waters to be classed as 'sufficient' by 2015.	Plan must adhere to the requirements of the Directive, as appropriate.	Sustainability objectives should reflect the Directive requirements and protect the quality of bathing waters.

EU BIODIVERSITY STRATEGY TO 2020			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The European Commission has adopted an ambitious new strategy to halt the loss of biodiversity and ecosystem services in the EU by 2020. The six targets cover: • Full implementation of EU nature legislation to protect biodiversity • Better protection for ecosystems, and more use of green infrastructure • More sustainable agriculture and forestry • Better management of fish stocks • Tighter controls on invasive alien species • A bigger EU contribution to averting global biodiversity loss	Biodiversity loss is an enormous challenge in the EU, with around one in four species currently threatened with extinction and 88% of fish stocks over-exploited or significantly depleted.	Include policies that protect biodiversity.	• Check to ensure that the requirements of the strategy is covered in the SA Framework objectives and appraisal criteria.
EU BIRDS AND HABITATS DIRECTIVE I.E. BIRDS DIRECTIVE (2009/147/EC) AND EU DIRECTIVE ON THE CONSERVATION OF NATURAL HABITATS AND OF WILD FAUNA AND FLORA (92/43/EEC) BIRDS DIRECTIVE (2009/147/EC))			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
EC Directive 92/43/EEC, known as The Habitats Directive aims to	No relevant key targets.	The MPA should be aware of the locations of SPAs and SACs and take	• Check to ensure that the

conserve fauna, flora and natural habitats of EU importance. The fundamental purpose of this directive is to establish a network of protected areas throughout the Community designed to maintain both the distribution and the abundance of threatened species and habitats, both terrestrial and marine. The Directive complements the EU Directive on the Birds Directive. The network of Special Areas of Conservation (SAC) and Special Protection Areas (SPAs) is called Natura 2000. The Conservation (Natural Habitats & c.) Regulations 1994 (known as the Habitats Regulations) implement the Habitats Directive and the Birds Directive. These make it an offence deliberately to kill, capture, or disturb a European Protected Species, or to damage or destroy the breeding site or resting place of such an animal. The Habitats Regulations require the review of outstanding decisions, permissions, consents and other authorisations which would be likely to have a significant effect on a European Site. If as a result of an application the‘e is 'likely to be a significant ’ffect' on the designated features of the SAC (this could include impacts from activities not within the boundaries of the SAC and the cumulative effect of several separate applications) then the planning authority must obtain an		this into account during any site selection and area of search activity. The plan should also ensure that provision is made for undertaking ‘appropriate assessments’ where required. The MPA should be aware of the presence of European Protected Species within Gloucestershire.	requirements of the Directive(s) are covered in the SA Framework objectives and appraisal criteria.

Appropriate Assessment' of the application and its likely effect. Local authorities should be aware of the presence of European Protected Species and their obligations to afford them protection.			
EU DIRECTIVE ON THE MANAGEMENT OF WASTE FROM THE EXTRACTIVE INDUSTRIES (2006/21/EC)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The purpose of the Directive is to prevent water and soil pollution from the deposition of waste into heaps or ponds and puts emphasis on the long-term stability of waste facilities to help avoid major accidents, such as the pollution of the Danube river caused by a cyanide spill, following a damburst of a tailings pond in Baia Mare/Romania in 2000. The Directive is not yet finalised. It is likely to be agreed in the second half of 2005. Member States would therefore have to transpose the EU legislation by the end of 2007. The main elements of the Draft Directive are: • Conditions for operating permits. • General obligations concerning waste management. • The obligation to	No relevant key targets.	Plans should clearly recognise that some minerals development can cause pollution and harm human health where they produce dangerous substances.	The Directive encourages recycling and the prudent use of natural resources and the protection of the environment. It aims for a reduction in water and soil pollution. The SA Framework should include objectives that reflect the tenor of the proposed Directive.

characterise waste before disposing of it or treating it. • Measures to ensure the safety of waste management facilities. • A requirement to draw up closure plans. • An obligation to provide for an appropriate level of financial security ("polluter pays" principle).			
EU WASTE FRAMEWORK DIRECTIVE (2008/98/EC)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
This Directive establishes a legal framework for the treatment of waste * within the Community. It aims at protecting the environment and human health through the prevention of the harmful effects of waste generation and waste management.	No key targets.	The waste hierarchy is encouraging the reduction in the use of landfills, which has an impact upon minerals.	The SA should consider he impacts of the policy on mineral planning.
IPCC'S FOURTH ASSESSMENT REPORT ON CLIMATE CHANGE (2007)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To limit and/or reduce all greenhouse gas emissions which contribute to climate change.	None	Plan should support reduction in emissions of greenhouse gases.	Consider inclusion of objectives to support reduction in emissions of greenhouse gases.

NATIONAL			
NATIONAL PLANNING POLICY FRAMEWORK (NPPF)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied, including for minerals The purpose of the planning system is to contribute to the achievement of sustainable development – economic, social and environmental.	No key target.	Policies in the plan must be in conformity with the NPPF.	Include sustainability objectives within the SA Framework that align with those set out in the NPPF.
PLANNING FOR FREIGHT ON INLAND WATERWAYS (DFT / DEFRA APRIL 2004)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

The Government wants to encourage more freight to travel by water instead of by road. The 4 Waterway Categories are: • Estuaries & tidal rivers • Large non-tidal waterways • Broad waterways • Narrow canals <u>Aggregates</u> Currently sand, gravel and stone form the greatest volume of freight currently transported on inland waterways in the UK. Related to the above, there are also objectives to safeguard and utilise existing wharf capacity and also to add to it.	No specific targets, but clear encouragement to move certain types of freight off the roads and make the best use of use of water transport and to preserve and increase wharf capacity.	Consider how the plan can best utilise the water transport options available in Gloucestershire, e.g. the River Severn, and the Gloucester – Sharpness Canal. Consider how the plan can safeguard existing wharfs and promote additional capacity in line with Government guidance.	Ensure that the SA Framework fully considers the issue of sustainable transport modes other than by road. The SA Objectives or sub-objectives should reference canal use and the safeguarding / expansion of wharfs.
DEFRA NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006 – SECTION 41: LIST OF HABITATS AND SPECIES OF PRINCIPAL IMPORTANCE IN ENGLAND 2008			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The lists have been prepared by the Secretary of State for Environment, Food and Rural Affairs as required under section 41(1) of the Natural Environment and Rural Communities (NERC) Act 2006. They identify the living organisms (species) and types of habitat which the Secretary of State	The extensive lists of habitats and species are available on the DEFRA website at: http://www.defra.gov.uk/wildlife-countryside/biodiversity/sect41-nerc.htm	The plan should further the conservation of the habitats and species on the list.	The SA Framework and particularly the SA Objectives and sub-objectives focusing on biodiversity should reflect the requirements of the NERC Act.

considers are of principal importance for the purpose of conserving biodiversity in England. In accordance with section 41(2) of the NERC Act, the Secretary of State has consulted Natural England on the species and habitats to be included on the list. Under section 41(3) of the NERC Act the Secretary of State must take steps (where they are reasonably practicable), and promote the taking of steps by others, to further the conservation of the habitats and species on the list. In light of this duty, seven sectors have been identified where actions taken by public bodies and other stakeholders could deliver significant conservation benefits for habitats and species on the list.			
THE CONVSERVATION OF HABITATS AND SPECICIES REGULATIONS 2010 (AS AMENDED)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Regulations provide for the designation and protecti‘n of 'European’sites', the protecti‘n of 'European protected s’ecies', and the adaptation of planning and other controls for the protection of European Sites.	No targets or indicators specifically, or directly relevant to minerals plans.	Consider how the plan can contribute to meeting the regulations.	Include sustainability objectives relating to protection of European sites.
BIODIVERSITY 2020 – A STRATEGY FOR E’GLAND'S WILDLIFE AND ECOSYSTEM SERVICES			

KEY OBJECTIVES RELEVANT TO PLAN AND SA	KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA	IMPLICATIONS FOR PLAN	IMPLICATIONS FOR SA
Sets out how the quality of our environment on land and at sea will be improved over the next ten years. The strategy has focused on four main themes: • A more integrated large-scale approach to conservation on land and at sea. • Putting people at the heart of biodiversity policy. • Reducing environmental pressures. • Improving our knowledge. **The Strategy includes the following priorities:** • Creating 200,000 hectares of new wildlife habitats by 2020 – this is equivalent to an area the size of Warwickshire • Securing 50% of SSSIs in favourable condition, while	No targets or indicators specifically, or directly relevant to minerals plans.	Consider how the plan can contribute to meeting the strategy.	Include sustainability objectives relating to the quality of the environment.

maintaining at least 95% in favourable or recovering condition • Trialling new approaches to setting fishing quotas to reduce discards • Encouraging more people to get involved in conservation by supporting wildlife gardening and outdoor learning programmes • Introducing a new designation for local green spaces to enable communities to protect places that are important to them			
NATURAL ENVIRONMENT WHITE PAPER (2011)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The White paper contains 92 commitments related to the natural environment under several themes including the following: Protecting and improving our natural environment; Growing a green economy; and Reconnecting people and nature.	No targets or indicators.	Protect the intrinsic value of nature and recognise the multiple benefits it could have for communities.	Include a sustainability objective relating to the enhancement of the natural environment.
SECURING THE FUTURE: DELIVERING UK SUSTAINABLE DEVELOPMENT STRATEGY (2011)			
KEY OBJECTIVES RELEVANT	**KEY TARGETS AND INDICATORS**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

TO PLAN AND SA	RELEVANT TO PLAN AND SA		
Enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life for future generations. There are 4 shared priorities: • sustainable consumption and production; • climate change and energy; • natural resource protection and environmental enhancement; and • sustainable communities.	Sets out indicators to give an overview of sustainable development and priority areas in the UK. They include 20 of the UK Framework indicators and a further 48 indicators related to the priority areas.	Develop policies that meet the aims of the Sustainable Development Strategy.	Include sustainability objectives to cover the shared priorities of sustainable development.
THE AIR QUALITY STRATEGY FOR ENGLAND, SCOTLAND, WALES AND NORTHERN IRELAND (2007)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Make sure that everyone can enjoy a level of ambient air quality in public spaces, which poses no significant risk to health or quality of life. Render polluting emissions harmless.	Sets air quality standards for 13 air pollutants.	Develop policies that aim to meet the standards.	Include sustainability objectives to reduce pollution and protect and improve air quality.
THE UK LOW CARBON TRANSITION PLAN (2009)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

Plan plots how the UK will meet the 34 percent cut in emissions on 1990 levels by 2020. The Plan shows how reductions in the power sector and heavy industry; transport; homes and communities; workplaces and jobs; and farming, land and waste sectors could enable carbon budgets to 2022 to be met.	The plan includes a 5-point Action Plan covering the following areas: • Protecting the public from immediate risk; • Preparing for the future; • Limiting the severity of future climate change through a new international climate agreement; • Building a low carbon UK; Supporting individuals, communities and businesses to play their part.	Plan should include policies that contribute towards achieving lower carbon emissions.	Objectives should reflect the aims set in the UK Low Carbon Transition Plan to reduce carbon emissions.
THE CARBON PLAN: DELIVERY OUR LOW CARBON FUTURE (2011)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Carbon Plan is a Government wide plan of action on climate change, including domestic and international activity.	The plan includes a range of sectoral plans and targets including low carbon industry.	Plan should include policies that contribute towards achieving lower carbon emissions.	Objectives should reflect the aims set in the Plan.
A STRATEGY FOR ENGLAND'S TREES, WOODS AND FORESTS (2007)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To provide, in England, a resource of trees, woods and forests in places where they can contribute most in terms of environmental, economic and social benefit now and for future generations; Ensure that existing and newly planted trees, woods and forests	The strategy identifies some possible indicators including: Proportion of woodland Sites of Special Scientific Interest (SSSIs) in favourable condition; Woodland bird indicator – bird population associated with woodland;	Plan should to promote the sustainable management of our existing woods and forests. Plan should, where appropriate, seek a steady expansion of woodland areas to provide more benefits for society and our environment.	Consider inclusion of objectives to promote sustainable management of our existing woods and forests. Consider inclusion of objectives which aim to promote the expansion, enjoyment and understanding of woodland areas.

are resilient to the impacts of climate change and also contribute to the way in which biodiversity and natural resources adjust to a changing climate. Protect and enhance the environmental resources of water, soil, air, biodiversity and landscapes (both woodland and non-woodland), and the cultural and amenity values of trees and woodland. Increase the contribution that trees, woods and forests make to the quality of life for those living in, working in or visiting England. Improve the competitiveness of woodland businesses and promote the development of new or improved markets for sustainable woodland products and ecosystem services where this will deliver identifiable public benefits, nationally or locally, including the reduction of carbon emissions.	Access to and use of woodland; Trends in all plants and ancient woodland indicator plants.		
NATIONAL TRAILS PUBLICATION			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
This leaflet published by the Countryside Agency in 2005 details 15 of the most popular National Trails in the England and Wales. National Trails pass through some of the most stunning and diverse	No targets or indicators specifically, or directly relevant to minerals and waste plans.	Consider how the plan can protect those National Trails upon which it may have an impact.	• Consider rights of way issues, the enjoyment of the countryside and the protection of National Trails in the SA Framework.

landscapes in Britain. Of particular relevance to Gloucestershire is the Cotswold Way Natural Trail and the Thames Path and Ridgeway National Trail.			
UNDERGROUND, UNDER THREAT – GROUNDWATER PROTECTION: POLICY AND PRACTICE			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To prevent pollution of groundwater.	To meet Water Framework Directive requirements for groundwater quality.	Plan should recognise the importance and vulnerability of groundwater resources and ensure that they are not detrimentally affected by waste development.	Include an objective to protect groundwater quality.
FLOOD AND WATER MANAGEMENT ACT 2010			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To improve the management of flood risk for people, homes and businesses. To protect water supplies.	Local Authorities to prepare flood risk assessments, flood maps and plans. EA to prepare Local flood risk management strategies.	Plan should take account of flooding and water management issues and strategies.	Consider inclusion of objective to reduce flood risk and other impacts on the water environment.
PLANNING FOR THE SUPPLY OF NATURAL BUILDING AND ROOFING STONE IN ENGLAND AND WALES			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
This report describes the nature and significance of the building and roofing stone industry in England and Wales and its relationship to planning and development. The report highlights the fact that there is demand for natural stone products in three main areas:	No key targets.	Consider policies in the plan that support the continuing use of natural building stone – where there is demonstrated need. Consider the potential implications for waste minimisation in this sector in that 'building stone production necessarily involves a relatively high	• Include sustainability objectives in the SA Framework that aim to provide for the demand for natural stone products, balanced against environmental and other

• Repair and maintenance to historic buildings and structures using materials from original or compatible sources. • Maintaining vernacular styles in new construction, using materials that are compatible with traditional local building practices. • Contemporary design requirements for new buildings and structures, including internal and external decoration. The report concludes that there is a need to protect areas of designated interest and value, to prevent the unnece inimizing onsation of resources and also 'the need for positive action to encourage the continued operation of existing and new building stone quarri inimizingmising the burden placed upon them by the planning system as far as possible.		proportion of waste'.	considerations.
COLLATION OF THE 2009 AGGREGATE MINERALS SURVEY FOR ENGLAND AND WALES			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The report provides comprehensive information for monitoring and facilitating aggregates provision at	No targets, but there are a number of significant indicators for example The South West (15.2 Mt) was the largest	Develop appropriate and sustainable policies in the light of the survey	• Consider the results of the AM Survey.

local, regional and national level. Aggregate Minerals (AM) surveys, based at four-yearly intervals since 1973, provide an in depth and up-to-date understanding of regional and national sales, inter-regional flows, transportation, consumption and permitted reserves of primary aggregates. The Aggregate Minerals 2009 survey report also presents data on the movement and consumption of primary aggregates by subregion. Information is also presented on the quantity of aggregate minerals granted and refused planning permission and, for the first time, planning permission applications withdrawn or awaiting a decision, between 2006 and 2009, by site type and environmental designation.	producer of limestone for aggregates.	results.	
CLIMATE CHANGE ACT 2008			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The purpose of the act is to provide a legally binding long-term framework to cut carbon emissions to ensure the UK meets its commitments to tackle climate change. The main elements of the Act are: • Reducing emissions by 80% by2050 compared to 1990 levels.	National target of reducing emissions by 80% by 2050 compared to 1990 levels.	Consider how the plan can help to contribute to reducing emissions.	Ensure the issue of climate change is addressed.

• Production of a Climate Change Risk Assessment every 5 years. • A national adaption programme which will be reviewed every 5 years which will address the most pressing climate change issues in England.			
MINERALS EXTRACTION AND THE HISTORIC ENVIRONMENT			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The document sets out English Heritage's position on mineral extraction and the high-level policies that will form the basis for responses and views put forward by English Heritage on any matter relating to the winning, working and safeguarding of minerals. Although it was produced before the NPPF English Heritage consider the document and a majority of the contents are still relevant. Its principal purpose is to guide the work of English Heritage, but it will also be of interest to the wider historic environment sector, government, local authorities, the minerals industry and other organisations that care for the environment. The document sets out English Heritage's formal policy on mineral extraction, including:	No key targets (as yet).	Ensure English Heritage's formal policy on mineral extraction is taken into account in the development of the MLP.	Consider the impacts upon the historic environment.

• Sustainability and supply • Safeguarding the industry's heritage • Impacts and mitigating of current and future extraction • Maintaining historic fabric and local distinctiveness			
MINERALS EXTRACTION AND ARCHAEOLOGY: A PRACTICE GUIDE 2008			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO LAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The document provides guidance specifically for dealing with archaeological remains as part of mineral development through the planning process. Although it was produced before the NPPF English Heritage consider the document and a majority of the contents are still relevant. The principal purpose of this Practice Guide is to provide clear and practical guidance on the archaeological evaluation of mineral development sites. The guide seeks to ensure that: □ the best-informed decisions are made regarding the level of archaeological knowledge needed at each stage of the planning process □ the use of the full range of up to date and appropriate investigative techniques is considered □ there is consistency in planning authority responses, proportionate to the archaeological potential of the site and reasonable in all other	No key targets (as yet).	Ensure the best practice is taken into account in the development of the LDF.	Consider the impacts upon archaeology.

respects.			
GUIDANCE ON THE MANAGED AGGREGATE SUPPLY SYSTEM			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Managed Aggregate Supply System has provided the mechanism to deliver long term planning for the supply of aggregates, based on sound evidence. It has also served to proactively manage the rate of primary extraction, by placing added emphasis on the need to meet demand from other sources – including secondary and recycled materials and marine dredged aggregates.	No Key Targets	There is a requirement to produce a Local Aggregate Assessment. This will contribute towards figures within the MLP.	Consider the impacts on the mineral resource.
STRATEGIC / SUB-~NATIONAL			
THAMES WATER RESOURCES MANAGEMENT PLAN (Final Published Version 2014)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Further significant reductions in leakage resulting in the reduction in leakage by a third by 2020. A ten year programme of targeted compulsory metering. An enhanced water efficiency	Reduction in leakage by one third by 2020 followed by further reductions. Household meter penetration of around 80% by 2020 and the metering of all connected properties.	Consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	• The SA should contain objectives protecting water supplies and water bodies from pollution.

programme. An integrated Demand Management (IDM) approach to planning and delivery. Development of key schemes including Upper Thames Major Resource Development in 2021/22. The development of 'what if' analysis and contingency options.			
WESSEX WATER RESOURCES MANAGEMENT PLAN (Final Published Version- 2014)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To improve the water supply network to guarantee the security of supply in the event of source failure, to help overcome low river flow problems and to provide alternative supplies when some sources are affected by elevated nitrate levels. To move progressively towards metering when a property changes hands, accompanied by tariffs aimed at encouraging sustainable use and protecting those in 'water poverty'. Communicating more clearly how customers can be more efficient in their use of water and offering additional services to promote water efficient behaviour. Protecting the quality of our water supplies by working with farmers and encouraging the Environment Agency to make full use of their	No specific targets or indicators that are directly relevant.	Consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	• The SA should contain objectives protecting water supplies and water bodies from pollution, promoting the efficient and sustainable management of waste water.

powers to protect groundwater.			
SEVERN TRENT WATER RESOURCES MANAGEMENT PLAN (Final Published Version: 2014)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
• Meet statutory obligations as a licensed water supply and waste water undertaker. • Comply with environmental legislation and meet environmental obligations. • Adopt the overall least financial, social and environmental cost strategy for achieving and maintaining target headroom throughout the planning period to 2035. • Continue to promote and expand water efficiency programmes and water reuse options. • Accelerate the installation of water meters and more sophisticated tariffs. • Continue to drive down the level of leakage from the network. • Reinforce the network to avoid interruptions to supply.	None specifically relevant to the MCS.	Consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	• The SA should contain objectives protecting water supplies and water bodies from pollution and promote the efficient and sustainable management of waste water.

• Design and maintain water resource and supply systems to achieve no more than three hosepipe bans in 100 years. • Increase the scope for water transfers across our own region and between water companies. • Develop new sustainable water resources when needed. • Ensure no failures in treated water quality outside the standards that are set.			
DRAFT WELSH WATER MANAGEMENT PLAN			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
This Plan is aligned to their current policy position detailed in the document, 'Our Sustainable Future', and with their forthcoming Environment Strategy. Key aspects are: Looking after our a–sets - Our priorities to the milestone year 2015 include....providing robust infrastructure to enable continued economic growth and development in Wales.	No specific targets or indicators that are directly relevant.	Consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	The SA should contain objectives protecting water supplies and water bodies from pollution and promote the efficient and sustainable management of waste water.

Responding to climate c–ange - We will implement changes to our business activities to cope with extreme weather events....through Water Resources Plans and enhanced protection of our key assets. Over the next 25 years....our vision is that customers should be able to look forward to....at least a 50% cut in greenhouse gas emissions. Safeguarding the enviro–ment - protected areas will not be adversely affected by our water abstractions. Meeting customers' expecta–ions - Our Water Resources Plans will be based on a hosepipe ban not occurring at a rate of more than once in every 20 years.			
DRAFT BRISTOL WATER RESOURCES MANAGEMENT PLAN			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Improving network water efficiency. Helping customers reduce their demand for water. Developing existing and additional sources of water.	No specific targets or indicators that are directly relevant.	Consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	The SA should contain objectives protecting water supplies and water bodies from pollution and promote the efficient and sustainable management of waste water.

Investigating opportunities for bulk supplies from other companies. Maintain security of water supply at current levels. Provide environmental assets that help to reduce overall greenhouse gas emissions. Help customers become aware of water use and water efficiency. Improve our own water efficiency by large leakage reductions. Deliver a fairer way to pay for water through metering.			
SEVERN RIVER BASIN MANAGEMENT PLAN			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
By 2015, 17 per cent of surface waters (rivers, lakes, estuaries) in this river basin district are going to improve for at least one biological, chemical or physical element.	The biological parts of how the water environment is assessed – the plant and animal communities – are key indicators.	Consider the protection of water supplies and water bodies from pollution.	The SA should contain objectives protecting water supplies and water bodies from pollution.

34 per cent of surface waters will be at good or better ecological status/potential. 65 per cent of groundwater bodies will be at good status by 2015. In combination 35 per cent of all water bodies will be at good or better status by 2015. At least 38 per cent of assessed surface waters will be at good or better biological status by 2015.			
THAMES RIVER BASIN MANAGEMENT PLAN			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
By 2015, 22 per cent of surface waters (rivers, lakes estuaries and coastal waters) are going to improve for at least one biological, chemical or physical element 25 per cent of surface waters will be at good or better ecological status and 17 per cent of groundwater bodies will be at good overall status by 2015.	The biological parts of how the water environment is assessed – the plant and animal communities – are key indicators.	Consider the protection of water supplies and water bodies from pollution.	The SA should contain objectives protecting water supplies and water bodies from pollution.

In combination, 25 per cent of all water bodies will be at good or better status by 2015. At least 30 per cent of assessed surface waters will be at good or better biological quality by 2015.			
Emerging South West Marine Plan			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Opportunities identified: - • consistency of marine planning across south west and Wales (especially Severn estuary), enabling better environmental, economic, and social outcomes; • identification of locations to improve water quality through better coordination on habitat and sediment management to benefit tourism and aquaculture; • increase of aquaculture production and marine energy development by promoting co-location, optimising use of space. Industries and government should identify opportunities, and review regulatory processes;	No targets or indicators specifically, or directly relevant to minerals local planning	Consider the implications of the plan on future supplies of non land-won minerals and how these may contribute to the supply of minerals more generally. .	The SA should contain objectives that appropriate respond to the delivery of the marine plan – in particular the management of the water environment covered by the marine plan and / or water environments. that may have an influence upon it.

multiple benefits (including improved health and economic development) can be met through managing public outdoor spaces, including access to the coast identify future need for disposal sites and appropriate management responses by working with ports and others Challenges identified: - to maximise benefits and enable future innovation, growth and diversification in the Severn estuary it will require a focus on both marine energy development and ongoing access to ports (Bristol); identifying landward resource needed to support conservation of intertidal habitat, particularly coastal lagoons; fisheries management should explore the particular sensitivity of deep sea habitats to fishing; ensure governance measures are in place to represent south west interests in the development of the Ireland to France interconnector.			
SOUTH WEST NATURE MAP			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To identify where most of the major biodiversity concentrations are found and where targets to maintain, restore and re-create wildlife might	No specific relevant targets but aims to prevent further biodiversity losses, re-establish lost wildlife and enable it to adapt to the pressures of climate	See Gloucestershire Nature Map.	See Gloucestershire Nature Map.

best be met. To formulate sustainable choices for development, e.g. through Local Development Frameworks and the Regional Spatial Strategy. To assist in targeting the new Environmental Stewardship Scheme. To develop partnerships and projects for biodiversity in the region. To provide a focus for projects that will help biodiversity to adapt to climate change.	change. The Map shows the best areas to maintain and expand (through restoration and/or re-creation) terrestrial wildlife habitats at a landscape scale.		
THE SUSTAINABLE COMMUNITIES PLAN (2003) FOCUSING ON: SUSTAINABLE COMMUNITIES IN THE SOUTH WEST			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The plan does not cover all issues of importance to communities but it does address: • Housing • Planning and neighbourhood renewal issues • Transport.	No targets or indicators specifically, or directly relevant to minerals and waste plans.	Consider how the plan can contribute to the broad objectives and aims of the strategy.	Include sustainability objectives that aim to build 'sustainable communities' in line with the Sustainable Communities Plan.
GLOUCESTERSHIRE STRATEGIC FLOOD RISK ASSESSMENT FOR MINERALS & WASTE DEVELOPMENT FRAMEWORK (SEPTEMBER 2008)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

The purpose of the SFRA is to: • inform the SA so that flood risk is taken into account when considering options in the preparation of strategic land use policies. • Propose appropriate policy recommendations for the management of flood risk within Local Development Documents (LDDs). • Determine the acceptability of flood risk in relation to emergency planning capability. • Identify the level of detail required for future site-specific Flood Risk Assessments (FRAs) that support planning applications.	No specific targets.	Carefully consider the implications of the SFRA in terms of the development of strategic policies and site allocations. Guide development to the areas of lowest flood risk. Guidance is provided within the NPPF. The EA have stated that the SFRA is 'a fundamental document for assessing strategic waste sites…'	The SA process should facilitate the assessment of flood risk from all sources of flooding as detailed in the SFRA.
GLOUCESTERSHIRE LANDSCAPE CHARACTER ASSESSMENT			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
In October 2004 Gloucestershire County Council in association with the 6 Districts appointed consultants to undertake a Landscape Character Assessment (LCA) of:	No relevant key targets.	The plan should contain polices which: ensure that proposals for the location and form of mineral and waste sites are considered in light the recommendations of the Gloucestershire Landscape Character	Landscape objectives could be used as part of the SA Framework.

• The Severn Vale • The Upper Thames Valley • The Vale of Moreton • The Vale of Evesham Fringe Those sections of the county for which a detailed LCA had already been completed include: • The Forest of Dean District • The Cotswold's AONB The LCA has the following objectives: • To provide an assessment of the character, distinctiveness and qualities of each of the separate study areas, including the cultural and natural heritage resources, and to identify and describe the component landscape character types and landscape character areas. • To summarise the key characteristics associated with each landscape type to inform the principles in respect of landscape change. • To promote awareness of landscape character and the		Assessment.	

importance of landscape conservation, enhancement and restoration. The LCA can be used in a variety of forward planning strategies, land management schemes and in planning control and it provides a widely accepted assessment of landscape character.			
A Strategic Framework for Green Infrastructure – 2015			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Framework sets out the following vision: - 'That Gloucestershire's green infrastructure is enhanced, extended, promoted and managed to maximise its contribution to our high quality natural and historic environment, our health and well-being, our economy, our resilience to climate change and to a better quality of life for all. And that sustainable economic growth in the county is strengthened by giving green infrastructure the same consideration as other key county-wide infrastructure issues. The Framework also includes a suite of strategic principles. Those potentially relevant to Plan include: - Maximise opportunities to improve both strategic green infrastructure and more local green infrastructure, whenever change is being	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer support to contributing to realising the vision, and delivering the strategic principles of the framework.	The SA should contain objectives that appropriate respond to the delivery of the framework

considered – from individual development proposals and open space improvements to landscape scale environmental projects and flood alleviation schemes; Ensure that green infrastructure principles are embedded in policies that guide change in the county, for example local plans; water catchment plans; economic plans etc.;			
GLOUCESTERSHIRE NATURE MAP			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Gloucestershire Nature Map has been recognised by the Local Nature Partnership (LNP) as being the basis of a strategic ecological network for the county. It also forms part of the Gloucestershire Biodiversity Partnership biodiversity delivery framework.	The Gloucestershire Nature Map is a response to the above.	Plans should reflect the aims and objectives of the Gloucestershire Nature Map in terms of enhancing wildlife (where possible) and protecting habitats and species when changes e.g. climate change threaten their existence.	The SA Objectives should reflect the aims and objectives of the Gloucestershire Nature Map.
GLOUCESTERSHIRE COTSWOLDS GEODIVERSITY AUDIT & LOCAL GEODIVERSITY ACTION PLAN 2005			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

The LGAP is intended to: • Protect and manage the unique geodiversity of the Gloucestershire Cotswolds. • Increase understanding and awareness of geodiversity. • Promote geotourism, education and lifelong learning.	No key targets as such.	Implications particularly for minerals plans and mineral working in the Cotswolds.	The SA Framework should consider and reflect the importance geodiversity in Gloucestershire and reflect the aims of the LDAP for the Gloucestershire Cotswolds.
LOCAL AGENDA 21 STRATEGY FOR A SUSTAINABLE GLOUCESTERSHIRE			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To create communities that give people the best possible access to housing, work, education and services with the least possible travel. Promote the strengths of our local economy and encourage community enterprise to Grow. prove wildlife habitats, historic and built environment and landscape. Encourage renewable resources. Use fewer non-renewable resources and reduce waste. Prevent pollution. Identify and promote local character and culture.	No specific targets – but there are aims to meet government sustainability targets.	Consider how the plan can contribute to the objectives of the LA21 strategy.	• Check to ensure that the key relevant objectives are reflected in the SA Framework.

Involve our community in decision-making and local action. Help people to make the most of themselves through education, training and advice. Help people to deal with problems which hold them back from a healthy and fulfilling life. Help people to live free from the fear of crime and poverty.			
Gloucestershire's Local Transport Plan (2015-2031)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
<u>Gloucestershire's vision for transport is for:</u> <u>'A resilient transport network that enables sustainable economic growth by providing door to door travel choices'</u> <u>The plan's objectives se–k to -</u> • Support sustainable economic growth; • Enable community connectivity; • Conserve the environment; • Improve community health and well being; • Support sustainable economic growth;	No key targets relevant to the plan and SA. .	Consider how the plan may be able to offer support to contributing to realising the vision, and delivering the objectives and / or relevant LTP policies. Particular attention should be paid to ensuring the mineral-related traffic and the movement of minerals in general does not adversely affect the delivery of the LTP .	• Ensure that the key issues of 'moving minerals in and around Gloucestershire' as set out in the LTP are sufficiently scrutinised through the SA process.
Gloucestershire Strategic Economic Plan (SEP)			

KEY OBJECTIVES RELEVANT TO PLAN AND SA	KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA	IMPLICATIONS FOR PLAN	IMPLICATIONS FOR SA
The SEP has been developed around three components: - • Providing a highly employable and economically productive workforce that meets the needs of local business, particularly in high value growth sectors; • Attracting and retaining successful businesses in high value sectors and the next generation of talented workers	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer support to contributing to the delivery of the SEP's components Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and key infrastructure realised.	Check to ensure that the elements contained within three components are being adequately reflected in the SA Framework.
GLOUCESTERSHIRE BIODIVERSITY FRAMEWORK AND DELIVERY PLAN 2010			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
To provide clear strategic objectives and priorities, through an agreed joint work programme, for the development of the Gloucestershire Biodiversity Partnership and the implementation of the Gloucestershire Biodiversity Delivery Plan (Local Biodiversity Action Plan) during the period–2010 - 2015 Strategic Objective 1: Enhance and protect biodiversity by preventing habitat loss and degradation to	A top priority is to ensure that our remaining important wildlife –reas - SSSIs, Key Wildlife Sites, non-designated areas of priority habitat, etc, - are not eroded any further and that they achieve and maintain favourable condition.	• Develop policies that contribute to the protection of biodiversity within the county and specifically the protection of the identified habitats and species. Ensure that the biodiversity value of any site is taken into account when assessing planning permissions concerning, or restoration of, minerals and waste sites or facilities.	• Ensure that the protection of the biodiversity of habitats, (balanced against the need for mineral sites and waste management facilities in the County) is fully reflected in the SA Framework's environmental objectives and criteria.

secure healthy, functioning ecosystems Strategic Objective 2: Facilitate the adaptation of the natural environment so that it can be resilient to climate change Strategic Objective 3: To realise fully the true value of Gloucestershire's natural environment as a foundation for sustainable development and the health and well-being of our local communities. Strategic Objective 4: Develop the Gloucestershire Biodiversity Partnership so that it is financially sound, well supported and effective in delivering its work programme through enhanced joint working			
COTSWOLD WATER PARK BIODIVERSITY ACTION PLAN (2007-2016)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
Note: This BAP replaces the 1997 – 2007 BAP above. <u>The 50 year Vision is as follows:</u> "The Cotswold Water Park should be a premier site for nature conservation where the requirements of industry, leisure, people and wildlife are successfully integrated." <u>The Generic Action Plan is as</u>	Various targets and actions under each Generic Action Plan 'Theme' 1 to 10. Various targets and actions under each of the following Habitat Action Plans (HAPs) and Species Action Plans (SAPs). • HAP for Boundary Features	Consider how the plan can contribute to the vision and targets of the Action–Plan - as outlined in this table. Consider how conflicts of interest between the minerals industry and wildlife can be successfully resolved and mitigated against. Consider policies in the plan that protect and enhance biodiversity	Include SA Objectives in the Framework that reflect the vision and objectives of the latest Cotswold Water Park BAP.

follows: 1. Landscape-scale approach – The Head of the Thames Wetland Corridor. 2. Planning. Minerals planning and Development Control. 3. Promote and facilitate collection and availability of biological information in the CWP. 4. Promote ecological and environmental research of priority habitats and species in the CWP. 5. Promote the balance of sports and recreation with nature conservation. Sports and recreation is a key part of the CWP. 6. Promote and enable land acquisition to safeguard sites of current and potential nature conservation importance. 7. Grants & Funding. 8. Education, Advice & Training. 9. Publicity, Interpretation and Awareness-raising. 10. Policy.	• HAP for Built Structures • HAP for Canals • HAP for Framed Land • HAP for Fen, Marsh & Reedswamp • HAP for Lowland Neutral Grassland • HAP for Sand & Gravel Quarries • Habitat Statement: Bare ground & early successional habitats for invertebrates • HAP for Standing Open Water • Habitat Statement: Ponds • HAP for Rivers & Streams • HAP for Woodland • SAP for Barberry Carpet Moth • SAP for Bats • SAP for Bittern • SAP for Black Poplar • SAP for Breeding Waterbirds • SAP for Dragonflies &	wherever possible.	

	Damselflies • Species Statement for Glow Worms • SAP for Great Crested Newts • Species Statement for Nightingale • Species Statement for Otter • Species Statement for Reed Bunting • SAP for Stoneworts • SAP for Water Voles • Species Statement for White-Clawed Crayfish • SAP for Wintering Waterbirds • SAP for Non-Native Invasive Species.		
COTSWOLD WATER PARK SUPPLEMENTARY PLANNING GUIDANCE			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The SPG zones the Water Park (within the Cotswold District) into zones of 4 types: A = Quiet–Zone - Development for low intensity uses B = Low Intensity Recreation Zone –	No targets.	Consider how the plan can further the aspirations of the SPG and ensure that the Water Park is made up of a successful variety of land uses. Consider the obvious importance of	• Check to ensure that the priorities of the SPG are reflected in the SA Framework objectives.

recreational use of land and or water is acceptable in principle. C = Sport, Recreation and Tourism – medium to high intensity uses will normally be allowed in this zone. D = Agriculture and Forestry – future gravel extraction will provide the opportunity to establish new forms of landscape. The development of land in Zone D will include the restoration of land to agriculture and forestry; the creation of woodland, lakes, marsh and other dry or wetland habitats for nature conservation management. The creation of wetland areas will not be acceptable within the vicinity of RAF Fairford because of problems associated with bird-strike.		sand and gravel extraction in Zone D and the importance of varied and high quality restoration schemes and programmes. In terms of wet-restoration, consider bird-strike issues.	
Gloucester-Cheltenham-Tewkesbury Joint Core Strategy: GCT-JCS (Submission Version – November 2014)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The JCS was formed to produce a co-ordinated strategic development plan to show how this area will develop during the period up to 2031. The Submission version JCS (Nov 2014) was submitted to the Secretary of State in late 2014 and is presently undergoing public examination. Interim examination findings where released in May 2016. <u>VISION</u> By 2031 Gloucester City, Cheltenham Borough and Tewkesbury Borough will have	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the JCS. Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and strategic-scale development (housing & employment) and infrastructure can be realised. .	The SA Framework should seek to complement and not undermine the objectives that relate to the vision and objectives and / or relevant core policies of the core strategy.

continued to develop a highly attractive and accessible places in which to live, work and socialise. The Joint Core Strategy area will be recognised nationally as enjoying a vibrant, competitive economy with increased job opportunities and a strong reputation for being an attractive place in which to invest. The character and identity of individual communities will have been retained while improved access to housing will have addressed the needs of young families, single people and the elderly. New developments will have been built to the highest possible standards of design and focused on protecting the quality and distinctiveness of each community. Established in sustainable locations, without increasing the risk of flooding, they will have been designed with sensitivity towards existing villages, towns and cities and with respect for the natural and built environment. As a result of a strong commitment to the housing and employment needs of the existing and growing population, all residents and businesses will benefit from the improved infrastructure, which will include roads, public transport and			

services, and community facilities. STRATEGIC OBJECTIVES Building a strong competitive urban economy. Supporting a prosperous rural economy. Conserving and enhancing the environment. Delivering excellent design in new developments. Meeting the challenges of climate change. Promoting sustainable transport. Delivering a wide choice of quality homes. Promoting healthy communities. Sustainable development is seen as being of key importance in the Joint Core Strategy. It includes the 'Presumption in Favour of Sustainable Development' policy recommended by PINS.. Core Policy SD4: Sustainable Design and Construction supports the unnecessary sterilisation of mineral resources via prior extraction.."where it is practical, taking into account environmental acceptability and economic viability".			
Gloucester City Plan (Pre-Publication Draft Version – March 2012 – July 2013)			

KEY OBJECTIVES RELEVANT TO PLAN AND SA	KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA	IMPLICATIONS FOR PLAN	IMPLICATIONS FOR SA
The City Plan presently seeks to follow a number of key development principles. Of potential relevance to the plan and SA are as follows: - To ensure development contributes to deliver a transforming City which brings regeneration benefits, promotes sustainable development and reduces the need for greenfield development by making the most efficient use of previously developed land and buildings. To ensure that delivery of growth is supported by necessary infrastructure provision including transport, schools, medical and health centres, community facilities and youth provision. To improve the health and prosperity of the City Centre and other designated centres by ensuring the provision of a balanced network of District and Local Centres which provide a range of shops and services for local people including the creation of new centres in appropriate locations that would not detract from the primacy and function of the City Centre. To deliver a City to live in that provides for the growth of sustainable communities where the right choice, balance and mix of housing types is provided to meet the range of needs	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the City Plan. Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and city-wide development (housing & employment) and infrastructure can be realised .	The SA Framework should seek to complement and not undermine the objectives that relate to the vision and objectives and / or relevant core policies of the City Plan.

and aspirations of local people, including those in need of affordable housing and higher value housing. To deliver a City that encourages and facilitates inward and indigenous investment and attracts innovative growth sectors, creates high and stable levels of economic growth and high quality and skilled jobs for the local population to reduce unemployment, Valuable heritage, areas of open space, allotment provision, nature conservation, sensitive landscapes and areas of recreation will be improved and protected, To ensure that development minimizes its impact on climate change through design and meeting building standards. The protection and enhancement of flood plains and their natural environment will be key as well as improving air quality, reducing traffic congestion and encouraging less use of the car, while adequate parking in new development will be provided. To deliver a connected City and ensure that all new development achieves a high standard of design, which reflects the local context and takes advantage of any opportunities to improve the character and quality of an area and is well integrated with the City and its surrounding countryside			

Tewkesbury Borough Local Plan to 2011 (Adopted – March 2006)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Plan's contains an overall vision: - "For the Borough is to ensure that development within the area contributes positively to creating sustainable communities. This will be achieved by directing development to locations where the mix of uses and proximity to existing facilities minimises the increase in transport demand whilst maximising residents' choice for access to the range of destinations they use in their daily lives." It also comprises of five objectives that underline the plan's policies:- To promote sustainable development; To conserve and enhance the built and natural heritage of the Borough; To stimulate an approach to new development; To stimulate a healthy local economic base; To meet the needs of residents whilst enhancing their quality of life.	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the currently adopted Tewkesbury Borough Local Plan Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and Borough-wide development (housing & employment) and infrastructure can be realised Also, how to ensure that any future minerals developments do not undermine the ambition to conserve and enhance the built and natural environment	The SA Framework should seek to complement and not undermine the objectives that relate to the vision and objectives and / or relevant core policies of the adopted Tewkesbury Borough Local Plan.
Tewkesbury Borough Local Plan (Pre-Publication Draft Version – February 2015)			
KEY OBJECTIVES RELEVANT TO	**KEY TARGETS AND INDICATORS**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

PLAN AND SA	RELEVANT TO PLAN AND SA		
The proposed vision for the Tewkesbury Borough Local Plan is as follows: - "Tewkesbury borough, a place where a good quality of life is open to all, where our environment and historic assets are cherished, and where a thriving economy supports healthy and happy communities." The proposed objectives will potential linkages to the Plan and SA are concerned with:- Delivering a wide choice of quality homes and provision of the necessary infrastructure. Promoting sustainable transport. This also includes provision of infrastructure. Promoting healthy connected communities. This also includes provision of infrastructure. Supporting a prosperous and competitive economy. This also includes provision of infrastructure. Conserving and enhancing the built and natural environment (includes historic assets, design, landscape, biodiversity – steering development away from designated areas and making the most efficient use of land, which should be brown field sites where available and appropriate.	No key targets relevant to the plan and SA. .	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the Tewkesbury Borough Local Plan Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and Borough-wide development (housing & employment) and infrastructure can be realised Also, how to ensure that any future minerals developments do not undermine the ambition to conserve and enhance the built and natural environment	The SA Framework should seek to complement and not undermine the objectives that relate to the vision and objectives and / or relevant core policies of the Tewkesbury Borough Local Plan.
Tewkesbury Borough Flood and Water Management Supplementary Planning Document (Adopted – December 2014)			

KEY OBJECTIVES RELEVANT TO PLAN AND SA	KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA	IMPLICATIONS FOR PLAN	IMPLICATIONS FOR SA
The SPD's key objectives of potential relevance to the Plan are as follows:- To steer new development to areas with the lowest probability of flooding; To ensure that new development does not increase the risk of flooding either on a site or cumulatively elsewhere; and to seek betterment, where possible; To require the inclusion of Sustainable Drainage Systems (SuDS) within new developments, which mimic natural drainage as closely as possible and provision for their long-term maintenance, in order to mitigate the risk of flooding. To ensure that development incorporates appropriate water management techniques that maintain existing hydrological conditions and avoid adverse effects upon the natural water cycle. To encourage on-site storage capacity for surface water attenuation for storm events up to the 1% probability event (1 in 100 years) including allowance for climate change.	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer support to the delivery of the key objectives of the SPD, particularly where minerals developments within the SPD area or could impact upon it are concerned.	The SA Framework should seek to complement and not undermine the objectives of the SPD. .

Stroud District Local Plan (Adopted – November 2015)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

The Local Plan contains a number of strategic objectives outlined below: *Maintaining and improving accessibility to services and amenities for our communities,* *Providing for a strong, diverse, vibrant local economy that enables balanced economic growth, coupled with enhanced job opportunities across the District* *Improving the safety, vitality and viability of our town centres, which link to and support the needs of their rural hinterlands* *Promoting healthier alternatives to the use of the private car and seeking to reduce CO2 emissions by using new technologies, active travel and/or smarter choices, working towards a more integrated transport system to improve access to local goods and services* *Promoting a development strategy that mitigates global warming, adapts to climate change and respects our environmental limits* *Conserving and enhancing Stroud District's distinctive qualities, based on landscape, townscape and biodiversity* The plan seeks to support the provision of between 6,800 and 12,500 net jobs, and 11,400 new homes up to 2031. A concentrated development strategy is being promoted with a small number	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer policy support to aid with the delivery of the vision, objectives and / or relevant policies of the Stroud Local Plan.	The SA Framework should seek to complement and / or at least not undermine the objectives that relate to the vision, objectives and / or relevant core policies of the Stroud Local Plan

of strategic growth –reas - where there is best access to existing services, facilities, jobs and infrastructure. Delivery Policy ES1 Sustainable Construction and Design seeks efficiency in the materials used in development,, including the type, life cycle and sources to be used; and flexibility and adaptability to allow future modification of use or layout and / or future refurbishment and retrofitting			
Cheltenham Borough Plan 2nd Review (Adopted – June 2006)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Plan seeks to deliver a total of 36 objectives, which collectively contribute to meeting the aims of the Cheltenham Community Plan: - To secure the provision of necessary and relevant services and facilities in conjunction with development; To achieve a high standard of design in new development; To protect public safety and amenity; To reduce crime and the fear of crime; To make provision for identified development needs; To create more sustainable patterns of development, with priority use of previously-developed land; To make best use of development land; To meet the needs of the elderly and people with disabilities;	No key targets relevant to the plan and SA	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the adopted Cheltenham Borough Plan Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and Borough-wide development (housing & employment) and infrastructure can be realised. Also, how to ensure that any future minerals developments do not undermine the ambition to conserve and enhance the built and natural environment	The SA Framework should seek to complement and / or at least not undermine the objectives that relate to the objectives and / or relevant core policies of current adopted plan

To conserve and enhance the setting of Cheltenham; To conserve the natural beauty of the Cotswold Hills; To conserve and improve Cheltenham's architectural, townscape and historical heritage; To conserve and improve Cheltenham's landscape character and green environment; To safeguard the countryside from encroachment and inappropriate development; To prevent the coalescence of Cheltenham with other settlements; To protect high quality agricultural land; To protect and improve the quality of land, air and water; To reduce waste and energy consumption and conserve natural resources; To maintain and encourage biodiversity; To maintain and enhance the economic vitality of the borough; To maintain economic diversity To safeguard land and buildings in existing employment use, or if unoccupied, last in employment use; To meet housing requirements, including the need for affordable housing; To secure a high standard of residential amenity; To maintain and enhance the vitality and viability of the town centre as a sub-regional shopping centre; To maintain a diversity of local shopping facilities; To maintain and enhance existing			

opportunities for recreation and leisure; To increase the range of facilities for recreation and leisure; To encourage provision of a range of facilities and attractions for tourists; To encourage the retention and provision of a range of community facilities and services; To reduce the risk of flooding and flood damage; To make adequate provision in development for the satisfactory supply and treatment of water; To promote sustainable transport To safeguard the potential for the future provision of transport infrastructure; To ensure infrastructure in development is provided to a satisfactory standard; To safeguard or improve personal safety in the transport system; To contribute to road traffic reduction and improve traffic flow.			
The Cheltenham Plan (Pre-Publication Draft Version – August 2015)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Plan is founded on 'Three Vision Themes, which are set out below:-: A place where people live in strong, safe, healthy, well-served and well-connected communities; A place with a prosperous and enterprising economy where employment opportunities are increasing and diversifying, and where	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer policy support to aid with the delivery of the vision, objectives and / or relevant policies of The Cheltenham Plan..	The SA Framework should seek to complement and / or at least not undermine the objectives that relate to the vision, objectives and / or relevant core policies of The Cheltenham Plan

the benefits are felt by all; A place where the quality and sustainability of our cultural assets and natural and built environment are valued and recognised locally, nationally and internationally. It also contains a series of objectives of which the following may prove to be relevant to the Plan and SA: - Ensure provision of sufficient housing land and other opportunities for residential development that meets the needs of the current and future population of the Borough; Promote the development of adaptable and flexible employment space within Cheltenham so that sites and buildings can be re-used with minimal environmental impact; Address the challenge of climate change, ensuring that development meets high design and sustainability standards and is built to be adaptable over the long term; Manage and reduce the risk of flooding within the borough; Encourage the delivery of sustainable transport infrastructure, a range of			

transport options and better links across the borough including parking provision and public transport.			
Forest of Dean Core Strategy (Adopted – May 2013)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The Core Strategy's vision states: - The Forest of Dean will be a thriving sustainable community with a high quality environment, a developing local economy including tourism, housing which meets the needs of residents (including affordable homes) and safer communities. Potentially relevant objectives are as follows:- • Providing quality environments throughout the district- to protect the environment for the benefit of the community and in order to attract new businesses; Facilitate regeneration- to support a stronger more sustainable economy in a better quality environ • ment;	No key targets relevant to the plan and SA.	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the Core Strategy. Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and District-wide development (housing & employment) and infrastructure can be realised Also, how to ensure that any future minerals developments do not undermine the ambition to conserve and enhance the built and natural environment	The SA Framework should seek to complement and / or at least not undermine the objectives that relate to the vision, objectives and / or relevant core policies of the Core Strategy.

Providing homes including affordable homes- to meet the housing needs of the comm • unity			
Cotswold District Local Plan 2001-2011 (Adopted April 2006)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**
The local plan sets out the following vision through to 2011: - Development will have been controlled in a way which continues to conserve and enhance the District's natural resources, built heritage and biodiversity. New development will have been carefully planned, designed and located in or adjacent to the most sustainable settlements (in the context of strategic spatial policy) and in a way which maximises the use of previously developed land within urban areas and creates a safe and attractive environment. New development will have been planned and located so that it minimises car use, the need to travel and the impact of traffic generally, and encourages use of public	No key targets relevant to the plan and SA	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the adopted local plan. Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and district-wide development (housing & employment) and infrastructure can be realised Also, how to ensure that any future minerals developments do not undermine the ambition to conserve and enhance the built and natural environment	The SA Framework should seek to complement and / or at least not undermine those objectives that relate to the vision, objectives and / or relevant core policies of the adopted local plan.

transport, cycling and walking. Employment opportunities will have been created and maximised in a sustainable way that enables the economy of the whole District to remain successful and well mixed. Agriculture will have diversified in a way which is sensitive to the Cotswold environment, whilst maintaining a vibrant rural economy. The strategy of restraint on development in the District will have been maintained, whilst sufficient affordable housing will have been provided in the right sustainable locations to meet the District's needs. Cirencester's role as the District's main service centre, together with the role of the Principal Settlements in providing everyday services to local communities, will have been enhanced, or, at the very least, maintained. Reasonable access will have been attained for local people to all basic services and facilities.			
Cotswold District Local Plan (Submission Version – June 2016)			
KEY OBJECTIVES RELEVANT TO PLAN AND SA	**KEY TARGETS AND INDICATORS RELEVANT TO PLAN AND SA**	**IMPLICATIONS FOR PLAN**	**IMPLICATIONS FOR SA**

Potentially relevant elements of the local plan's vision are as follows: - To have contributed to enabling a strong, competitive and innovative local economy; To have supported the delivery of a range of housing that helps to meet the requirements of all sections of the community; To have further capitalised on the District's key strengths, notably its high quality historic and natural environment; • To have met the development needs of communities, businesses, and visitors paying particular account of:climate change and flood risk; • the area's internationally recognised natural, built and historic environment; and • the provision of adequate supporting infrastructure. The local plan's objectives that may relate to the Plan and the SA include: - Maximising water and energy efficiency, promoting the use of renewable energy sources and sustainable construction methods, and reducing pollution and waste; Supporting the principle of waste	No key targets relevant to the plan and SA	Consider how the plan may be able to offer support to the delivery of the vision, objectives and / or relevant core policies of the local plan. Particular attention should be paid to ensuring steady and adequate supplies of minerals are facilitated so local economic competitiveness can be supported and district-wide development (housing & employment) and infrastructure can be realised Also, how to ensure that any future minerals developments do not undermine the ambition to conserve and enhance the built and natural environment	The SA Framework should seek to complement and / or at least not undermine the objectives that relate to the vision, objectives and / or relevant core policies of the local plan.

minimisation. Maximise the quality of life by maintaining and supporting the delivery of infrastructure, services and facilities needed to support local communities and businesses.			

Appendix 4
Baseline Information

Mineral baseline

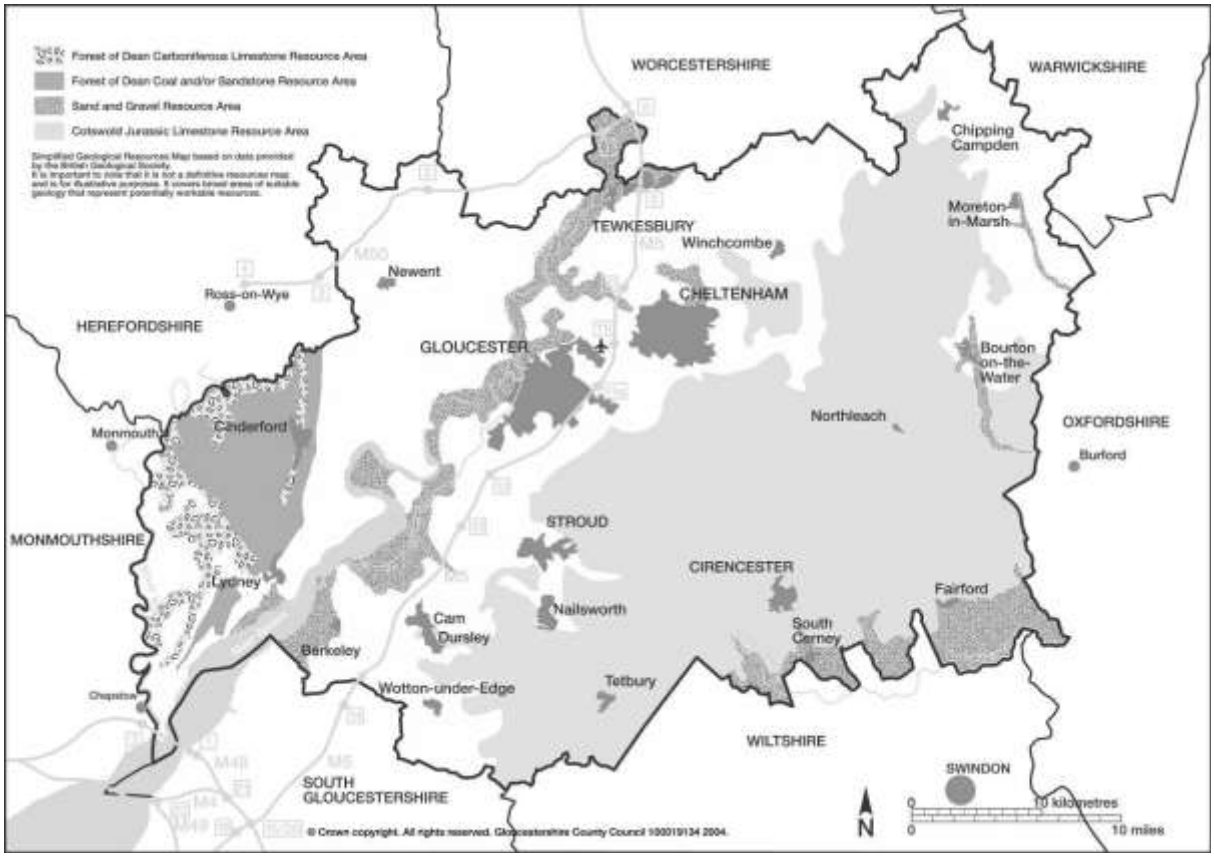
Gloucestershire has a diverse geological base with significant mineral deposits of economic value. The County can be subdivided into the following mineral resource areas:

Table 1: Mineral Resource Areas in Gloucestershire.

Mineral Resource Area	Mineral Type
Forest of Dean	❑ Limestone (Carboniferous) ❑ Sandstone ❑ Clay ❑ Iron Ore ❑ Oil & Gas (potential – but as yet unproven) ❑ Coal
Cotswolds	❑ Clay ❑ Limestone (Jurassic)
Upper Thames Valley	❑ Sand and Gravel ❑ Clay ❑ Cornbrash (Jurassic Limestone)
Vale of Moreton	❑ Sand and Gravel
Severn Vale	❑ Sand and Gravel ❑ Clay

Gloucestershire possesses a range of mineral resources of local, regional and national importance. These include primary land-won and recycled / secondary aggregates, energy minerals such as coal, and non-energy minerals that include clays and building stone. The map below gives a simplified indication of Gloucestershire's mineral resources.

Figure 1: Gloucestershire's Mineral Resources



Sand and Gravel

The sand & gravel resources of Gloucestershire comprise of fluvio-glacial and fluvial deposits that occur irregularly, but extensively over a number of lowland areas and river valleys around the County. Notable concentrations of sand & gravel deposits can be found to the southeast within the Upper Thames Valley, throughout the central lowland corridor of the Severn Vale, and to the far northeast of Gloucestershire, along a wide river valley area, called the Vale of Moreton. There are also some very small pockets of solid sand working around the Bromsberrow Heath area.

Supplies

In 2014, 0.43 million tonnes of sand & gravel was supplied from Gloucestershire. The majority of this supply was sourced from the Upper Thames Valley resource area. The remainder originated from sources elsewhere across the county. As of 01/01/2015 the Aggregate Reserve total was 5.46 million tonnes.

Infrastructure

The vast majority of sand and gravel sites are concentrated within the Upper Thames Valley (UTV) resource area. However, there are minor sources in the Severn Vale corridor and in the Bromsberrow area. In terms of sand & gravel processing, the Upper Thames Valley area has the most capacity available in the county. Minerals Core Strategy Technical Evidence Paper MCS-A (July 2007) indicates that there are two concrete batching plants, four fixed processing plants and a block-making factory which benefit from planning permission. In addition, substantial processing opportunities can be found across the county boundary within Wiltshire. Example sites include: the Cleveland Farm Complex near Ashton Keynes and Eysey Manor Farm to the East of Latton. Outside of the Upper Thames Valley there is much less processing capacity, including two ready mixed concrete plants and several mobile processors. One of the ready mixed concrete plants is a stand-alone, satellite operation, which is fed by imported material some of which is has been barged along the River Severn and Sharpness Canal from Ryall quarry in Worcestershire.

Markets

Market information for sand & gravel is based on washed and graded materials rather than as a finished aggregate product. Consequently, it is difficult to establish true market information and trends of local supplies as it is often transported from one site to another (sometimes across county and regional boundaries) depending upon the availability of plant and the proposed end-use. 2005 data would suggest that only a small fraction of sand & gravel is marketed directly within Gloucestershire. However, it is likely that a high proportion of the county's sand & gravel supplies were brought back to Gloucestershire as a finished aggregate product.

The four-yearly national survey of aggregates (AM survey) provides marketing data (i.e. imports and exports between mineral planning authority areas). The last published survey was 2009. A 2014 survey has now been completed and is shortly due to be released. Some local data relating to the 2014 has already been published through individual authority Local Aggregates Assessment (LAAs).In terms of sand and gravel exports, 2014 data is available and has been published through the Fourth Version LAA for Gloucestershire. It indicates that 76% of locally-sourced sand & gravel was marketed within the county. The only notable exports (equal to 20%) were to Wiltshire and Swindon. This is in sharp contrast to 2009 data, where only 19% of locally-sourced sand & gravel remained within Gloucestershire. A full picture of import data for 2014 has yet to emerge, although from information contained within the Oxfordshire (Interim) LAA Update for 2015, just over 10% (87,379 tonnes) of sand & gravel worked in the county was exported into Gloucestershire.

Crushed Rock

Gloucestershire's crushed rock resources can be divided into two specific types of limestone. These are separated over geological time and by geographical location. The older resources, known as Carboniferous limestone, occur within the Forest of Dean. And the younger resources, called Jurassic limestones are found in the Cotswolds. The Carboniferous limestones have the greatest degree of flexibility as an aggregate mineral. This is because they are more durable and harder than the Jurassic limestones. Whilst both limestone types can be used in general

construction, it is generally only Carboniferous limestones that can provide for a wider range of high specification projects. Although two distinct crushed rock resource areas have been identified within Gloucestershire, the overall distribution of these resources is not confined to the County's administrative boundaries. For the Jurassic limestones of the Cotswolds, the resource area is much wider and covers parts of the neighbouring authorities of Bath & North East Somerset, Oxfordshire, Warwickshire, and Wiltshire. In the case of the Carboniferous limestones from the Forest of Dean, comparable resources have been worked in the adjoining Welsh authority of Monmouthshire and more significantly to the Northwest of South Gloucestershire. There are also significant crushed rock resources further afield, which may have a relationship to Gloucestershire. These are found within North Somerset and Somerset.

Supplies

In 2014, 1.51 million tonnes of crushed rock was supplied from Gloucestershire.

Infrastructure

Minerals Core Strategy Technical Evidence Paper MCS-B (July 2007) states that, according to recent data a total of 20 quarries with the potential for crushed rock working are identified in Gloucestershire. Of these, 12 quarries are in active production, and 13 are classed as either not in production or only supplying other quarried products (e.g. building stone and agricultural lime) There are a further five un-worked and "dormant" quarries which will require additional planning permissions for schemes of conditions of working before their reserves can be worked.

Most of the County's crushed rock infrastructure and operational capacity is focused within the existing quarry sites of the Forest of Dean resource area. Minerals Core Strategy Technical Evidence Paper MCS-B details the fact that, according to recent figures there are three fixed processing plants, two roadstone coating plants, a concrete batching plant, a ready-mix concrete plant and several aggregate recycling facilities within this resource area. In contrast, crushed rock infrastructure within the Cotswold resource area are considerably less, with only two fixed processing plants, one concrete batching plant and one aggregate recycling facility in operation. Nevertheless, some mobile crushing plants are used intermittently at several hybrid-quarries that produce small amounts of crushed rock in association with building stone.

It should be noted that the majority of ancillary plant used in the Cotswold resource area is of a mobile nature and is also required for building stone purposes (e.g. cutting, dressing, bagging etc.) and agricultural lime production.

Markets

In 2014, 81% of locally-sourced crushed rock was supplied within Gloucestershire. Worcestershire and Herefordshire (10%) was the largest importer of crushed rock sourced from within Gloucestershire.

Reserves

As at 2014 the countywide reserves of crushed rock totalled 25.99 million tonnes.

- Remaining years of the crushed rock landbank

Applying the 10-year rolling average annual sales for crushed rock (1.517 million tonnes between 2004 and 2014 inclusive) the remaining landbank for county stands at 17.13 years.

Natural Building & Roofing Stone

The working of natural building & roofing stone is an important part of the mineral industry in Gloucestershire. It is required for the on-going repair and maintenance of the county's rich and diverse historic built environment and for supplying new-build and specialist, high-grade architectural projects. Gloucestershire's natural building & roofing stone resources are divided into two mineral types: Limestone and Sandstone.

These are separated over geological time and resource location across the county.

Supplies

In 2011 the total sales of non-aggregate stone, for building and roofing stone the figures are as follows: limestone 38,640 tonnes, sandstone 11,266 tonnes, making a total of 49,906 tonnes.

Markets

There are two principal markets for natural building & roofing stone – repair of historic buildings and new build projects. In Gloucestershire, the repair of historic buildings is a significant driver of local demand. The county has a renowned and rich built heritage, which includes over 13,432 listed buildings and 287 conservation areas. A significant number of buildings and structures covered by one of the listings or which lie within a conservation area will at some point require new stone for repair and maintenance purposes.

Despite the UK wide downturn in the production of building stone over the last 100 years or so, the local market has remained relatively constant. Planning policies and controls have also had an influence on the strength of this local market. This is demonstrated through district local plans and technical planning guides wherein policy support is given for the use of natural local stone, where it will act as a direct or suitable replacement in the repair of the historic environment.

The other key market for local building stone is new build projects. This is concerned with maintaining vernacular styles and local distinctiveness through the greater use of local building materials. It also refers to the specific requirements of certain contemporary styles in both external and internal decoration (e.g. carved fireplaces, sculptures, ornaments and flagstones). Similar to the sector for historic stone, district planning policies look to encourage the use of local building stone, where it contributes to the quality of the built environment.

Reserves

Due to the variability of the county's building stone resources, particularly those found in the Cotswolds it has proved extremely difficult to provide an accurate level of permitted reserves, which remain within the county.

As well as having to contend with a wide range of different stone types within each of the key mineral resources, there are also considerable variations in the type of building stone products that can be produced.

Furthermore, the variability in local resources can change significantly over a short space of time and within a relatively small area. Different layers / stone strata can become exhausted or revealed in a matter of weeks as quarry faces are worked through. A further complication in determining reserves is concerned with the opportunity to extract different quarried products alongside building stone. This is a key issue with the county's Carboniferous and Jurassic limestone, which also provides for a supply of crushed rock aggregate and small quantities of agricultural lime. Where reserve assessments are carried out at relevant quarries it can prove extremely difficult to distinguish between which part of the reserve will prove suitable as a building stone, or for another quarried product.

Nevertheless, local operators are still actively encouraged to provide annual estimates of their non-aggregate reserves. These estimates cover all natural building stone products, and agricultural lime, where it is also worked. In 2014, estimated non-aggregate reserves in Gloucestershire totalled 8.6 million tonnes. This included from both limestone and sandstone.

Recycled Aggregates

Recycled Aggregates in Gloucestershire are principally derived from the reprocessing of waste materials from construction and demolition projects. It is mainly made up of concrete and hardcore, although can also include railway ballast and road planings. The availability of recycled aggregates is very much dependent upon the level of activity of the construction industry and other infrastructure scheme such as road maintenance. Limited data collected through confidential local surveys suggests in the region of 100,000 tonnes of recycled aggregate may be generated at 'fixed' sites located across the county each year. However, this is likely to represent a fraction of the amount of recycled aggregate use in Gloucestershire as it doesn't account what may be generated by 'mobile' on-site facilities.

Secondary Aggregates

The availability of secondary aggregates for use within Gloucestershire is currently very limited. The Forest of Dean coalfield has represented a potential local source in the past, associated with the re-working of old colliery spoil tips. However, the quality and marketability for this material

has been challenging and has yet to emerge as a commercially viable option. In the future the development of a major new Energy from Waste (EfW) facility at Javelin Park near Gloucester (likely to be operation from 2019 onwards) may present a new local source of secondary aggregate. This is due to the inclusion of a bottom ash processing unit. Estimates, based on the EfW's planned operations, indicate upwards of 190,000 tonnes of Incinerator Bottom Ash Aggregate (IBAA) will be available.

Energy Minerals

Energy minerals in Gloucestershire comprise of coal, and potential, unproven resources of oil and gas. Coal resources are focused around a 90km2 area to the west of the County, in the Forest of Dean Coalfield. Less clear is the occurrence of potential viable oil and gas resources, which may be found within both source and reservoir rocks that exist in numerous locations across the county. In December 2015, the UK government announced it had issued Petroleum Exploration and Development licences (PEDLs) covering 4 'blocks' containing part of the Forest of Dean and a small section of Stroud at Sharpness adjacent to the River Severn. The PEDL licenses allow licensee holders time-limited and exclusive rights to investigate the potential for oil and gas and to undergo production subject to planning and other regulatory regimes. Presently, no technical studies have been released to confirm whether any of the PEDL areas contain viability oil or gas reserves and / or what type of techniques would need to be employed in order to undergo production. Unconventional hydraulic fracturing is an option, which may be explored with the PEDL areas that have been identified within Gloucestershire.

Natural building stone and Clay for civil engineering and brick-making

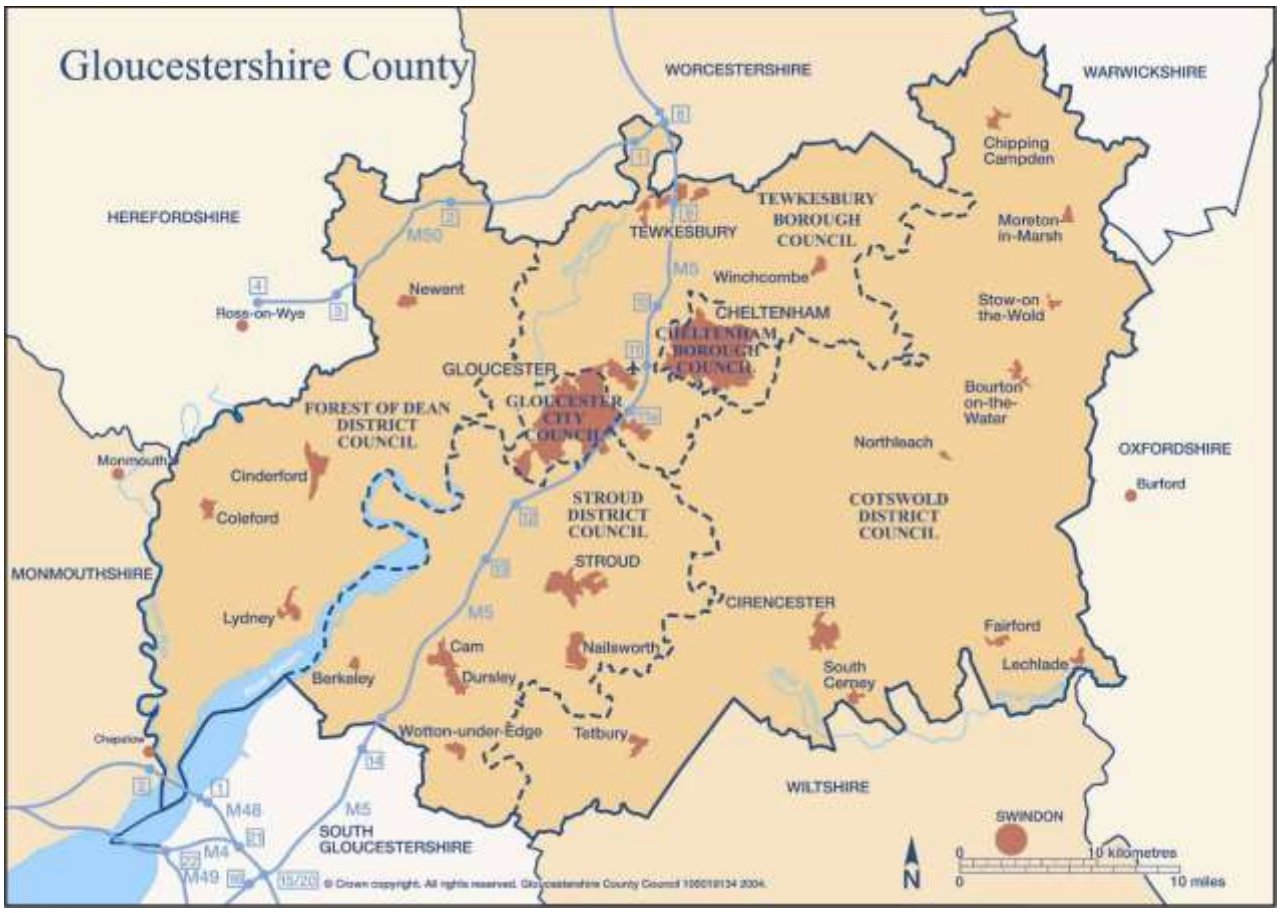
Non-energy minerals provide a small but no less important, contribution to Gloucestershire's mineral industry. These resources include non-aggregate limestone and sandstones from the Forest of Dean and non-aggregate limestone from the Cotswolds used for natural building stone, agricultural lime and other industrial processes. In some areas these minerals are worked in-conjunction with crushed rock aggregate. In addition clay minerals that occur in the Severn Vale, Vale of Moreton and Forest of Dean are used as a bulk fill, landfill cover, flood defence and for brick manufacturing. Resources of Iron Ore located within Forest of Dean also fall into this category. Iron Ore has not been worked in the County since the Second World War.

Other Baseline Information

Overview and character of the county

The heritage, culture and environment of the County helps support the County's quality of life and economy. Gloucestershire is substantially a rural county with the main urban focus in Gloucester and Cheltenham. It supports a wealth of international, national and locally important environmental assets, which need the appropriate level of protection from minerals and waste development.

Figure 2: Gloucestershire and the six Districts



Gloucestershire in relation to the factors in Annex 1 of the SEA Directive

Biodiversity

As a rural county Gloucestershire is relatively rich in habitats and species and much has been achieved through the Biodiversity Action Plan (BAP) process and on-going through the new Local Nature Partnership, see: http://gloucestershirenature.org.uk/index.php for more details. However certain species are still in decline and habitats being lost. Climate Change may prove to be very serious long term threat adding to declines. The County has a wide array of nature conservation designations ranging from the International level to the Local. International nature conservation designations include Ramsar sites, Special Protection Areas (SPAs) and Special Areas of Conservation (SACs).

Ramsar sites are Wetlands of International Importance listed under the auspices of the Ramsar Convention on Wetlands (established in Ramsar, Iran, in 1971). SPAs are designated under the EU Birds Directive (79/409/EEC) in order to conserve the habitats of vulnerable species (listed in Annex I of the Directive) and of migratory birds. SACs are designated under the EU Habitats Directive (92/43/EEC). As a requirement of DPD preparation, the Minerals and Waste Planning Policy Team have to undertake a Habitat Regulations Assessment (HRA) of the plans it is producing. The purpose of HRA of land use plans is to ensure that protection of the integrity of European sites is a part of the planning process at a regional and local level. The requirements are outlined in Article 6(3) and (4) of the European Communities (1992) Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("Habitats Directive"). To date, the process has involved producing a Baseline report on European Sites (i.e. on SPAs and SACs) that are in and close to Gloucestershire as well as a report at each stage of formal consultation which assesses options. See the link below for ~~all the~~ details on the HRA process. http://www.gloucestershire.gov.uk/extra/article/107942/Habitats-Regulations-Assessment-HRA-and-Appropriate-Assessment-AA

Figure 3 below and **Table 2** detail the European Sites in and close to Gloucestershire.

Figure 3: European Sites in and close to Gloucestershire

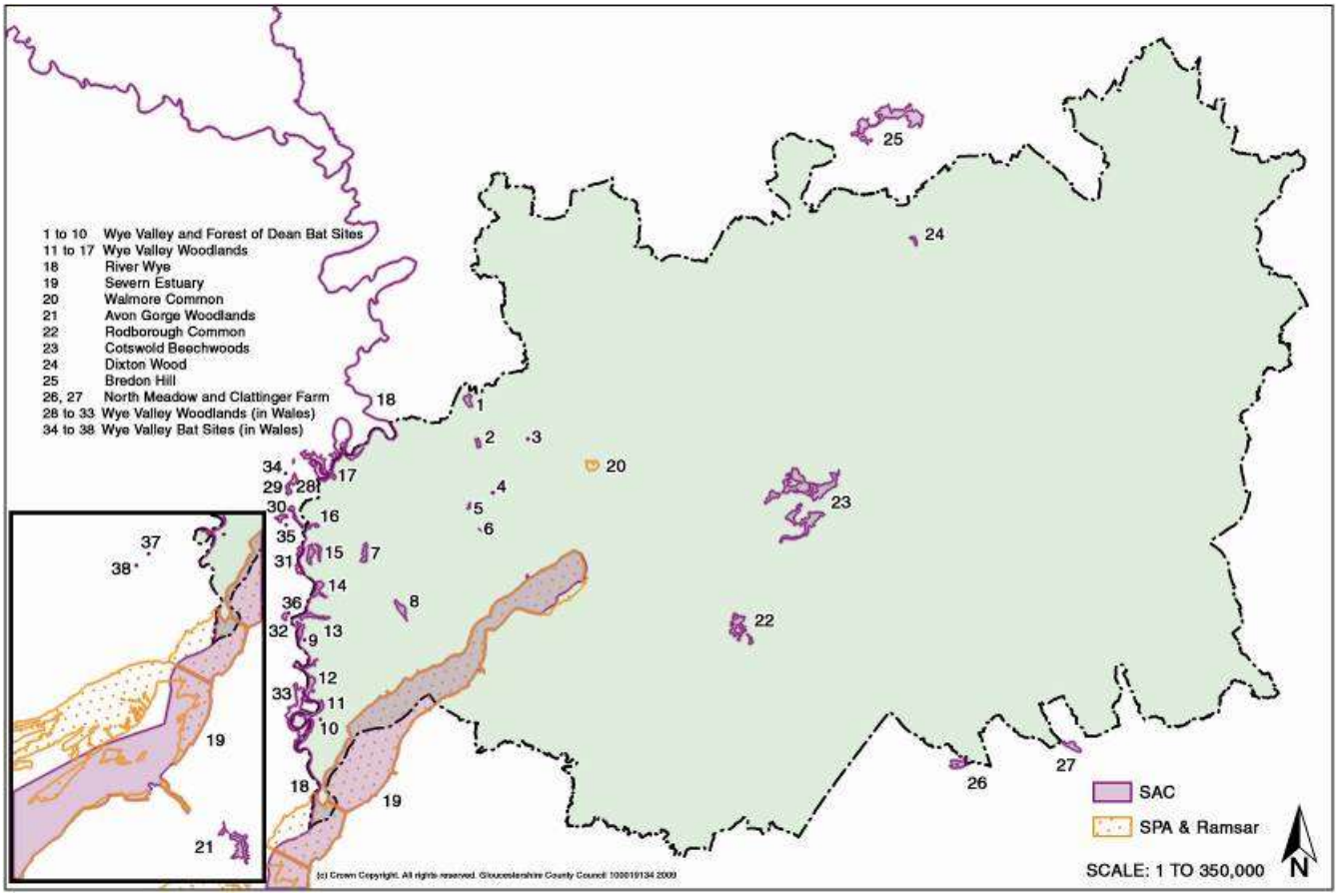


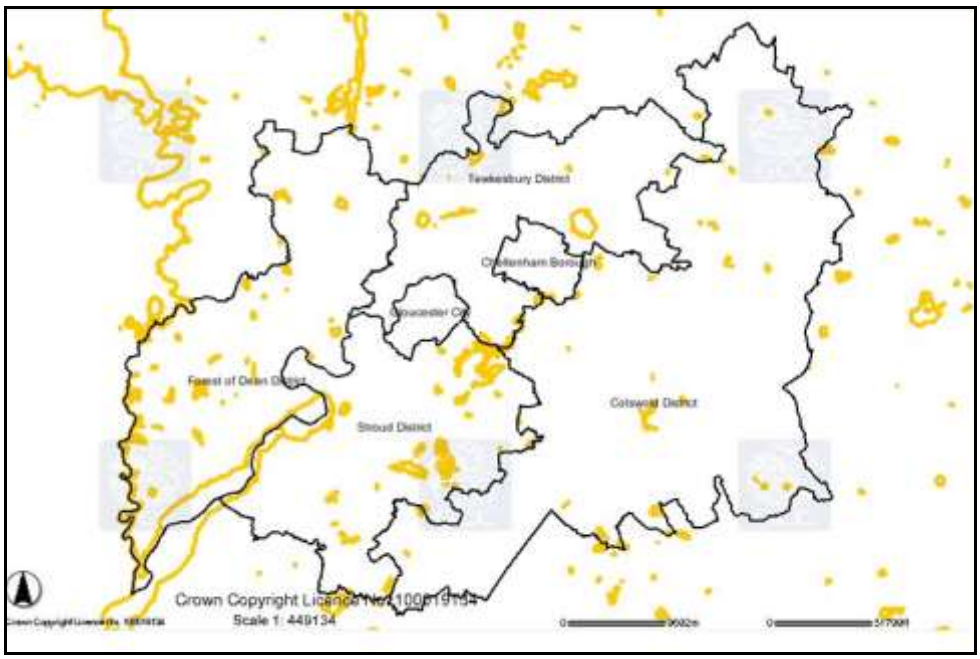
Table 2: European Sites in and close to Gloucestershire

European Site	Designation	District / Area
Rodborough Common	SAC	Stroud
Dixton Wood	SAC	Tewkesbury
Wye Valley and Forest of Dean Bat Sites	SAC	Forest of Dean, Monmouthshire
River Wye	SAC	Forest of Dean, Monmouthshire, Herefordshire, Powys
Wye Valley Woodlands	SAC	Forest of Dean, Monmouthshire, Herefordshire
North Meadow and Clattinger Farm	SAC	Wiltshire
Cotswold Beechwoods	SAC	Cotswold

Bredon Hill	SAC	Worcestershire
Walmore Common	SPA & Ramsar	Forest of Dean
Severn Estuary	SPA & Ramsar	Stroud, Forest of Dean

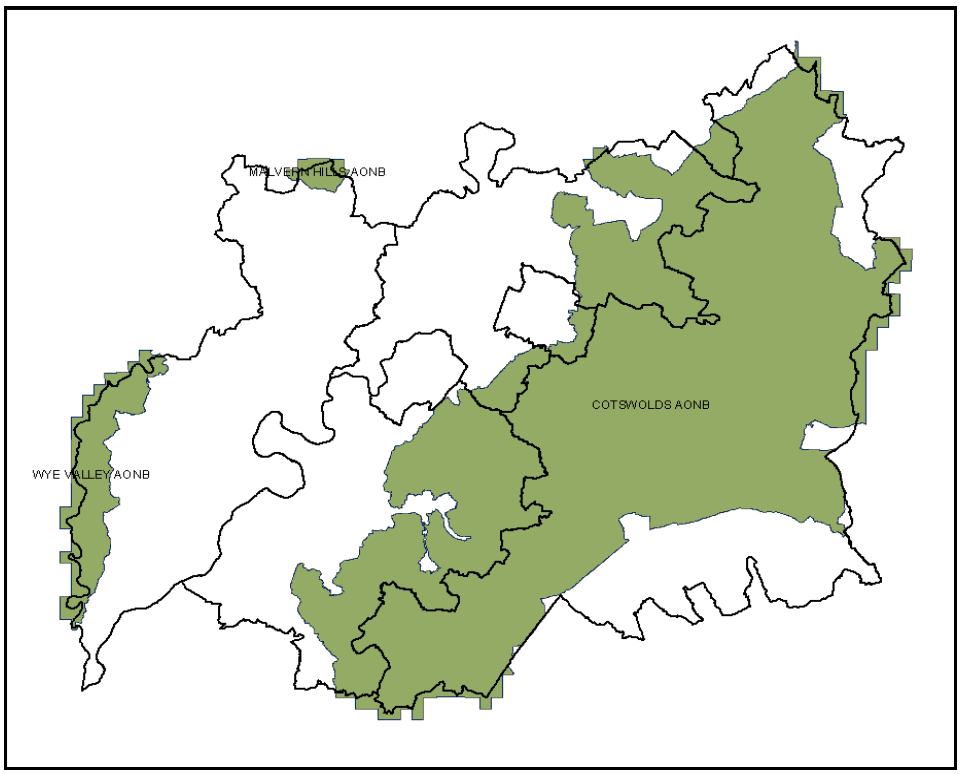
All SPAs and SACs in Gloucestershire are also designated Sites of Special Scientific Interest (SSSI). SSSI are designated by Natural England to provide statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. Consultation is required if they are threatened in any way. There are over 100 SSSIs in Gloucestershire – see **Figure 4** below. Four SSSIs have been additionally designated as National Nature Reserves (NNRs).

Figure 4: SSSIs in Gloucestershire.



The largest designation in terms of extent are the three Areas of Outstanding Natural Beauty (AONB) in the County: the Cotswolds, part of the Wye Valley and a very small section of the Malvern Hills. AONBs cover 136,400 hectares or 51.4% of the County area – see **Figure 5** below.

Figure 5: Extent of AONB in Gloucestershire



Their primary purpose is to conserve and enhance natural beauty while taking into account the economic and social needs of the area.

In addition to the international and national designations listed above there are a range of local designations including Key Wildlife Sites (see **Figure 6** below), Local Nature Reserves, Private Nature Reserves (for example those managed by the Wildlife Trust, Woodland Trust and Royal Society for the Protection of Birds (RSPB), Regionally Important Geological Sites (RIGS)41, Special Landscape Areas, Ancient Woodland Sites (see **Figure 7** below), and Registered Commons.

The MLP should conserve and enhance the landscape and scenic beauty of the AONB.

[41] While the government has proposed to change the name of Regionally Important Geological Sites (RIGS) to Local Geological Sites; in Gloucestershire they are still referred to as RIGS.

Figure 6: Key wildlife sites in Gloucestershire

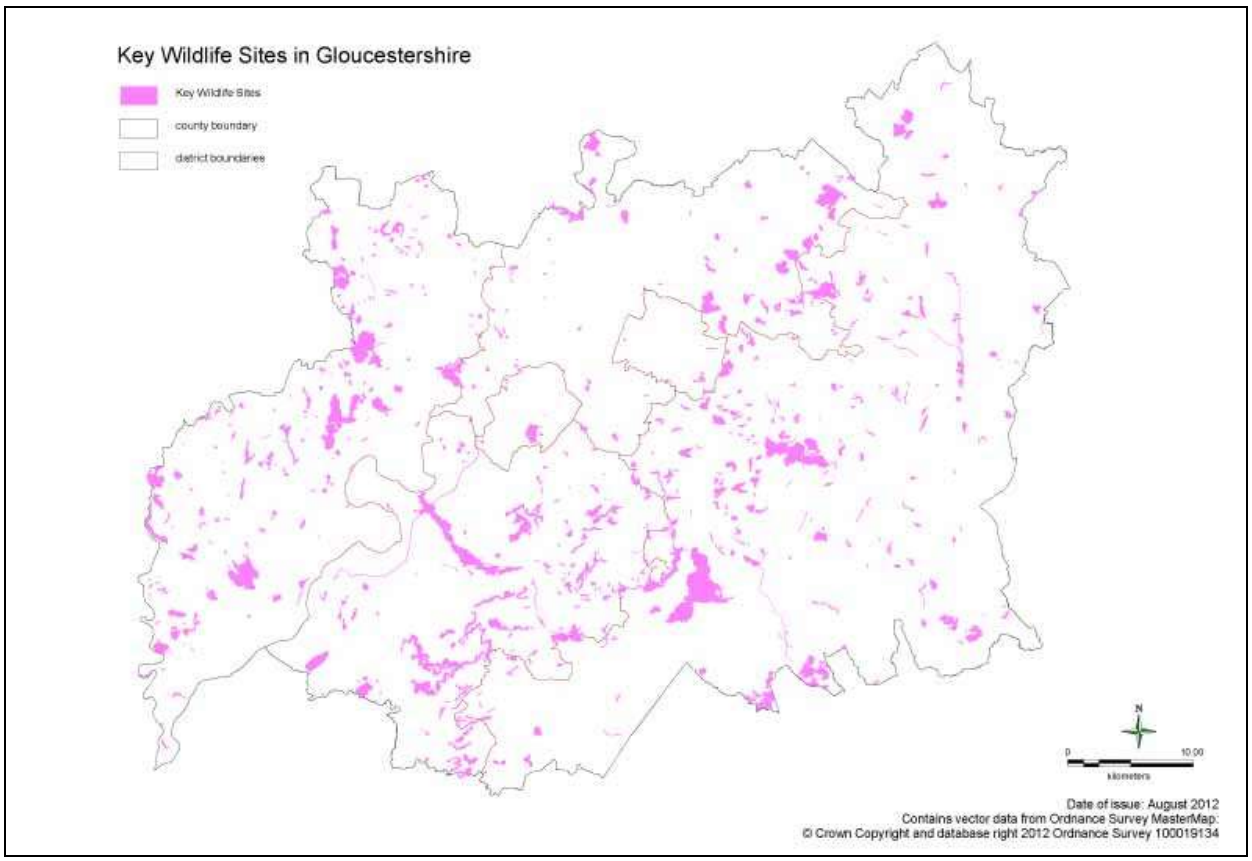
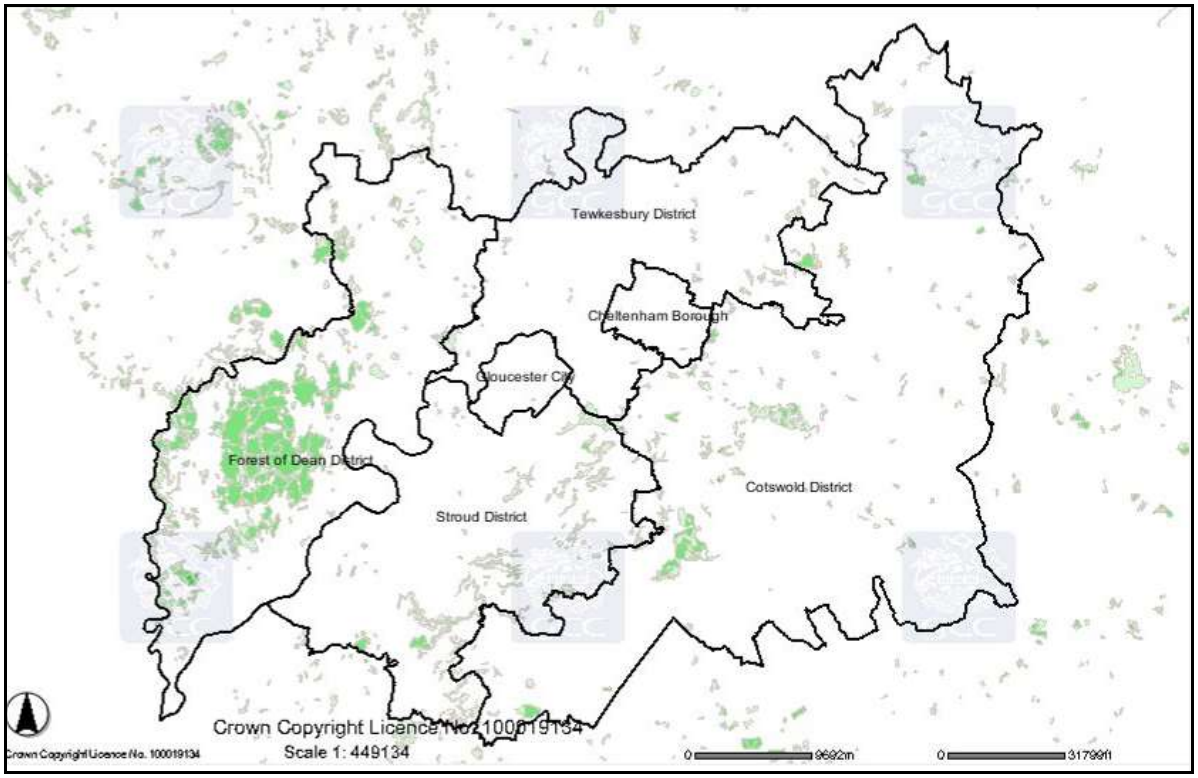


Figure 7: Extent of Ancient Woodland in Gloucestershire



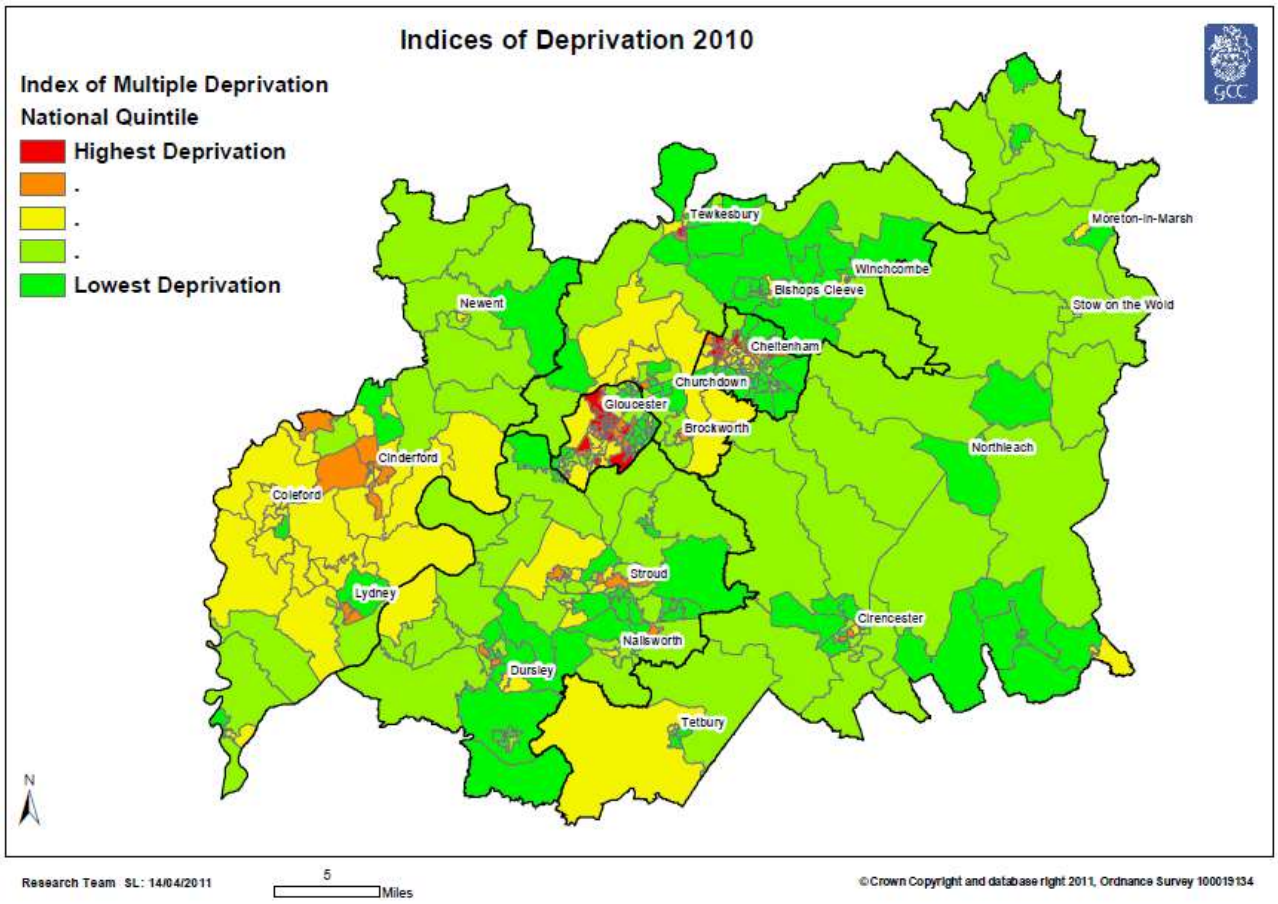
Population

As of mid-2014 just over 611,000 people were living in Gloucestershire. The large majority (84%) of people in Gloucestershire described themselves as "White British". 9.7% were also "White" but from minority groups (i.e. White Irish/ White Other). Around 6.2% people came from a BME (non-white) group. The County's population grew by 32, 400 between 2001 and 2011 (the date of the last census) andis projected to continue growing. By 2032, the county may be accommodating a further 80,000 residents. . Recent population growth has been fuelled by increases in life expectancy and people choosing to relocate to Gloucestershire from elsewhere in the UK.

In terms of the local economy, key economic indicators show Gloucestershire in a favourable light. The County has historically low levels of unemployment, and gross value added per head similar to the national average. Unemployment in Gloucestershire was 5% in 2012 (figures from South West Observatory), well below the national figure of 7.6%. In 2011 the average County income was £25, 817, almost £1000 lower than the national average. However the average income in Tewkesbury and Cheltenham were well above the national average. The Gloucester was well below. The County Average Weekly Earnings (Resident based gross – ASHE 2011) was £482 (figures from Gloucestershire First). The National figure in 2011 was £491 (figures from ONS ASHE 2011).

According to Government Indices of Deprivation there are significant pockets of deprivation in the County mainly in the urban areas of Gloucester and Cheltenham. The Indices of Deprivation are made up of 7 domains: Income; Employment; Health deprivation and disability; Education, Skills and Training deprivation; Barriers to Housing and Services; Crime and Living Environment. These are combined to give the Index of Multiple Deprivation. For Gloucestershire the ID2007 Super Output Areas in the national top 10% (i.e. in the worst 10%) are: Podsmead (1), Matson & Robinswood (1), Westgate (1), Westgate (3) Kingsholm and Wotton (3) St Mark's (1), St Paul's (2), and Hesters Way (1). (See **Figure 8** below).

Figure 8: Gloucestershire Index of Multiple Deprivation 2010

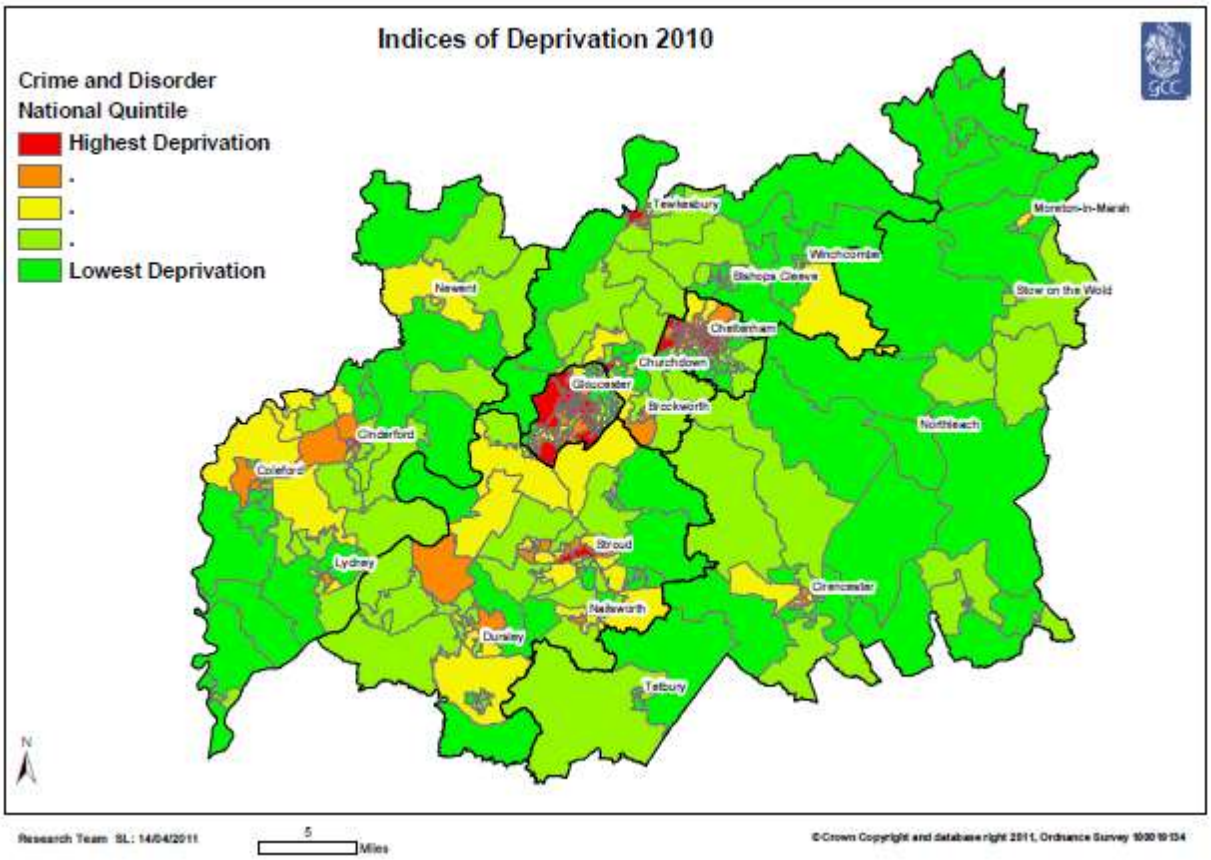


More information is available through *MAIDeN*, the multi-agency database for neighbourhoods in Gloucestershire at the following website:

http://www.maiden.gov.uk/

In terms of crime rates the figures for Gloucestershire are relatively low, compared to the national average for the key crimes such as domestic burglaries, violent offences, vehicle crimes and robberies. See **Figure 9** below for an indication of Gloucestershire's crime 'hotspots'.

Figure 9: Crime Hotspots in Gloucestershire



Human Health

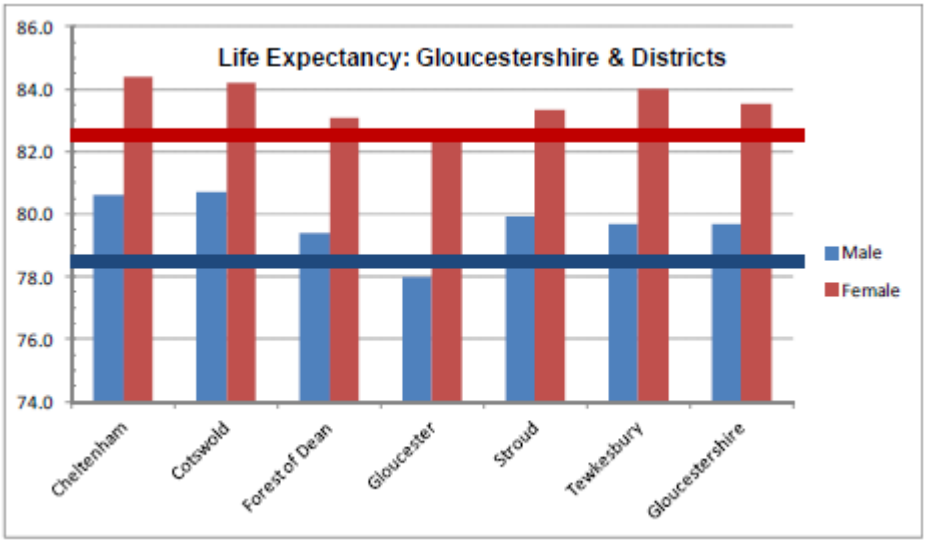
General health

The following information on health in Gloucestershire comes from a 2008 Health Profile which was funded by the Department of Health and produced annually by the Association of Public Health Observatories. Health indicators in Gloucestershire are generally better than for England. On average, people live longer than the England average. Levels of deprivation across Gloucestershire are generally low compared to the rest of England. However, there are pockets of deprivation in Gloucester and Cheltenham where life expectancy is lower than the rest of the county. All age, all cause mortality, early death rates from heart disease and stroke and from cancer are lower than the England rates and falling.

Life expectancy

The following chart shows that for both men and women, life expectancy at birth in Cotswold District, Tewkesbury Borough, Cheltenham Borough and Stroud District is higher than the average for England. Gloucester City is very close to the national average. Men in Gloucester are below the English average.

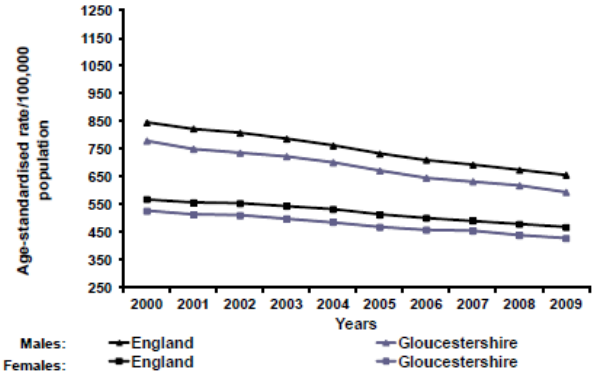
Figure 10: Life Expectancy at Birth – England & Districts in Gloucestershire



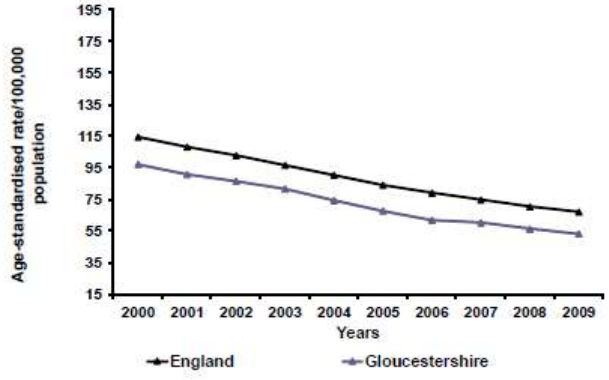
Key trends

The following trend charts showing 1. All cause mortality, 2. Early death rates from heart disease and stroke, 3. Early death from cancer indicate that broadly, for both men and women, Gloucestershire is following national trends in terms of improved health.

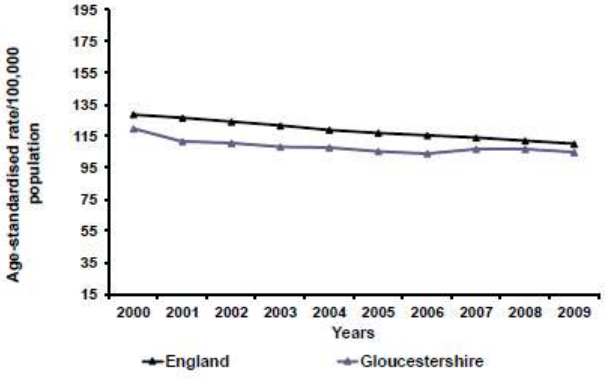
Trend 1:
All age, all cause mortality



Trend 2:
Early death rates from heart disease and stroke



Trend 3:
Early death rates from cancer



Flora and Fauna

Despite the large number of statutory and local designations, Gloucestershire has suffered from large-scale habitat and species loss over the last 50 years. This has largely been due to changes in farming practices. Among the species that have suffered from decline are farmland birds. At present approximately 100 species identified in the UK as priority species are thought to occur in Gloucestershire. Many of these species are also protected under the Wildlife & Countryside Act as well as for some the Habitats Regulations such as the European Otter, Dormouse, Lesser Horseshoe and Greater Horseshoe Bat and Pipistrelle Bat. Wetlands areas such as the Severn Estuary, Slimbridge Wildfowl Centre and the Cotswolds Water Park centre provide important habitats for protected and priority over-wintering and migratory birds.

In terms of the protection of flora and fauna, under Section 41(3) of the Natural Environment and Rural Communities Act 2006 (NERC) the Secretary of State must take steps (where they are reasonably practicable), and promote the taking of steps by others, to further the conservation of certain listed habitats and species. In light of this duty, seven sectors have been identified where actions taken by public bodies and other stakeholders could deliver significant conservation benefits for the habitats and species on the list. The English List is available on the Natural England website at:

http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx

The Gloucestershire Biodiversity Framework & Delivery Plan 2010 provides a basis for the conservation of local biodiversity which targets the conservation, enhancement and creation of priority habitats within the Gloucestershire Nature Map. The Gloucestershire Nature Map consists of a number of constituent parts called Strategic Nature Areas (SNAs). When viewed alongside the rivers targeted by the Environment Agency through the Water Framework Directive process the Gloucestershire Nature Map represents a strategic ecological network for Gloucestershire. Additional to the county approach the Cotswold Water Park Biodiversity Action Plan 2007-2016 (under review) provides detailed information and biodiversity targets for the south west corner of the County and into Wiltshire and Swindon beyond and can be found at:

http://www.waterpark.org/wp-content/uploads/2013/01/FINALCWP-BAP-2007-16-v8print.pdf'

Soil, Air and Water

Soil

Soil erosion is an increasing problem throughout the UK. About 50% of all land in the South West is thought to be at risk and about 6% of agricultural soils already suffer from erosion. Certain soils found in the far south west of the County, straddling the boundary with South Gloucestershire are listed as having an inherent vulnerability to high or severe structural problems. Such soils are easily sealed by heavy rain increasing the likelihood of local flooding and mud on roads. The increased sediment in rivers caused by soil runoff also poses a threat to aquatic ecosystems.

The MLP should where possible use poorer quality land in preference to the best and most versatile agricultural land.

Air

Air quality is a less significant issue in Gloucestershire than in some counties as a result of the largely rural nature of the County. However, road transport is a major source of local air pollution and both Gloucester City and Cheltenham Borough exhibit significantly higher concentrations of pollutants associated with road traffic than the more rural districts. The issue of air quality has been considered within the Gloucestershire Local Transport Plan 3. The six district authorities in conjunction with Gloucestershire County Council have undertaken individual air quality reviews and assessments. These have examined the extent of any potential exceedances of national air quality objectives for nitrogen dioxide and particulate matter. The results from local authority air quality review and assessment work indicate that the contribution of road traffic emissions to local

air quality is potentially significant within the County. However, an overall reduction of between 20 to 30%, and in some cases even greater, in the annual mean nitrogen dioxide was predicted between 1998 and 2005 across the County. For particulate matter concentrations, the predicted reduction in the annual mean between 1998 and 2004 was even greater, with a reduction of almost 50% predicted. Results from Stage 2 of this assessment work, indicate that exceedances are envisaged along the M5 motorway corridor, at receptors within 50 metres of the carriageway. A small number of road links have also been identified as having the potential to cause future exceedances of the air quality objectives.

The table below lists the Local Air Quality Management Areas (AQMAs) that have been declared in the County. An AQMA is defined where members of the public are likely to be exposed to exceedances in the levels of pollutant. The higher the number of AQMAs present in a Air District the greater the concern is about levels of air pollution.

Local Air Quality Management Areas in Gloucestershire.

District	Geographic coverage
Gloucester City	Barton Street
	Priory Road
	Painswick Road
	Presently 'undeclared' by monitoring occurs at Barnwood Road
Tewkesbury	Tewkesbury Town Centre
Forest of Dean	Lydney
Cheltenham	Cheltenham Borough wide
Stroud	Presently 'undeclared' but monitoring occurs at Bowbridge and Dudbridge Hill
Cotswold	The Air Balloon Roundabout, Birdlip

The MLP should help meet local, national and international objectives for air quality.

Water

Gloucestershire has around 690 km of rivers (11% of the total in the South West), which are monitored by the Environment Agency for river quality.

The water quality is monitored as part of meeting the Water Framework Directive (WFD). The WRD will help protect and enhance the quality of:

- surface freshwater (including lakes, streams and rivers)
- groundwaters
- groundwater dependant ecosystems
- estuaries
- coastal waters out to one mile from low-water

In terms of WFD the River Severn Water Management Plan details that the Severn Vale Catchment in regards to Rivers and Lake water bodies has:

- 7% good ecological status or potential;
- 38% good or high biological status;

- 88% good chemical status;
- 7% good ecological and chemical status.

The Thames Water Management Plan which covers the Cotswold Catchment has:

- 38% good ecological status or potential;
- 28% good or high biological status;
- 100% good chemical status
- 38% good ecological and chemical status.

Within the Forest of Dean there are water quality problems associated with uncontrolled discharges from former mine workings. These are often acidic and contain metals and other harmful substances that can have significant ecological impacts.

There are 6 Catchment Abstraction Plans (CAMS) which cover Gloucestershire. These detail how the Environment Agency manage water resources, existing and future abstraction licences and water availability within river catchments. The Severn Vale Abstraction Licensing Strategy (Environment Agency, February 2013) illustrates how the southern area of the Severn Vale CAMS, near Stroud and the Southern area of the Cotswolds, has limited water availability which is restricted for Groundwater. Water resources in these areas are available for less than 30% of the time.

Flooding in Gloucestershire

There is a long history of serious flooding in Gloucestershire. There was a major flood in 1947 and again in 2000. In June and July 2007, very heavy and prolonged rains caused major disruption in the County. 5,000 homes and businesses were flooded and many communities cut off. 200 people had to be rescued by boat, helicopter or land rescues. Electricity was lost to 48,000 homes for two days, and the whole county came close to having no power at. Over half the homes in Gloucestershire and 7,500 businesses were without any mains water for up to 12 days - and 17 days for drinking water. Across the County, 825 homes have had to be evacuated, resulting in approximately 1,950 people (including 490 children) seeking temporary accommodation. Widespread damage to the highways infrastructure was estimated to cost £25 million to repair.

The County Council commissioned a Level 1 Assessment by Halcrow Group Ltd in September 2008.

More information on flooding within Gloucestershire can be found at www.gloucestershire.gov.uk/flooding

Climatic factors

Climate change is recognised as one of the greatest threats facing the world today. It is now widely accepted that man-made emissions of greenhouse gases are responsibly for the increase in temperatures and that temperatures are rising faster than previously thought. As shown in Tables 3 & 4 below, the changes resulting from global warming are likely to result in warmer, drier summers and milder, wetter winters.

Table 3: Future Seasonal Climate in the South West

Season	Seasonal Climate 2050s*	Seasonal Climate 2080s*
Spring	Warmer by 1.0 to 2.0°C Precipitation totals similar to now	Warmer by 1.5 to 3.5°C Precipitation totals similar to now
Summer	Warmer by 1.5 to 3.5°C Drier by 15 to 30%	Warmer by 2.0 to 5.5°C Drier by 25 to 55%
Autumn	Warmer by 1.5 to 3.0°C	Warmer by 2.0 to 5.0°C

	Drier by 0 to 10%	Drier by 5 to 15%
Winter	Milder by 1.0 to 2.0°C Wetter by 5 to 15%	Milder by 1.5 to 3.5°C Wetter by 10 to 30% Snowfall will decrease by up to 70 - 90%.
** The range of figures indicates Low and High Emissions scenario results.* *Source: UK Climate Impacts Programme.*		

Summary of Potential Changes to the Climate of the South West by the 2050s.	
Temperature	• Annual warming of 1.0 to 2.5°C (annual warming of 1.5 to 4.5°C in the 2080s) • Greater night-time than day-time warming in winter • Years as warm as 1999 (+1.2°C hotter than average) more common • Greater warming in summer and autumn than in winter and spring • Greater day-time than night-time warming in summer
Precipitation	• Winters 5 to 15% wetter (winters 10 to 30% wetter by the 2080s) • Heavy rainfall in winter becomes more common • Summers as dry as 1995 (37% drier than average) become more common • Snowfall totals decrease significantly • Summers 15 to 30% drier (summers 25 to 50% drier by the 2080s) • Greater contrast between summer (drier) and winter (wetter) seasons • Winter and spring precipitation becomes more variable
Cloud cover	• Reduction in summer and autumn cloud and increase in radiation • Small increase in winter cloud cover
Humidity	• Relative humidity decreases in summer • Specific humidity increases throughout the year
Soil moisture	• Decreases in summer • Slight increase in winter soil moisture
Storm tracks	• Winter depressions become more frequent including deepest ones
North Atlantic Oscillation	• North Atlantic Oscillation may become more positive in the future, bringing more wet, windy and mild winters
Source: UK Climate Impacts Programme.	

Table 4: Summary of Potential Changes to the Climate of the South West by the 2050s

It is likely that such changes will have significant and far-reaching effects on the man-made and natural environment. Changes in temperature are likely to alter habitats and it is likely that many species will not be able to adapt quickly enough to survive. Recent published research indicates that there has been a decline in over-wintering birds from Arctic areas. Increasing sea temperatures are likely to alter the balance in marine species and alter the marine food chain.

Rising sea levels and wetter winters will also increase the likelihood of flooding in low-lying areas. This issue is of particular relevance in Gloucestershire with significant numbers of people living close to, or in, the floodplain of the River Severn. The Summer 2007 floods in Gloucestershire highlighted the seriousness of the issue and demonstrated that extreme summer events may also have to be contended with. Very warm, dry summers may result in increased soil compaction which could result in increased runoff and consequently greater flood risk.

Materials assets

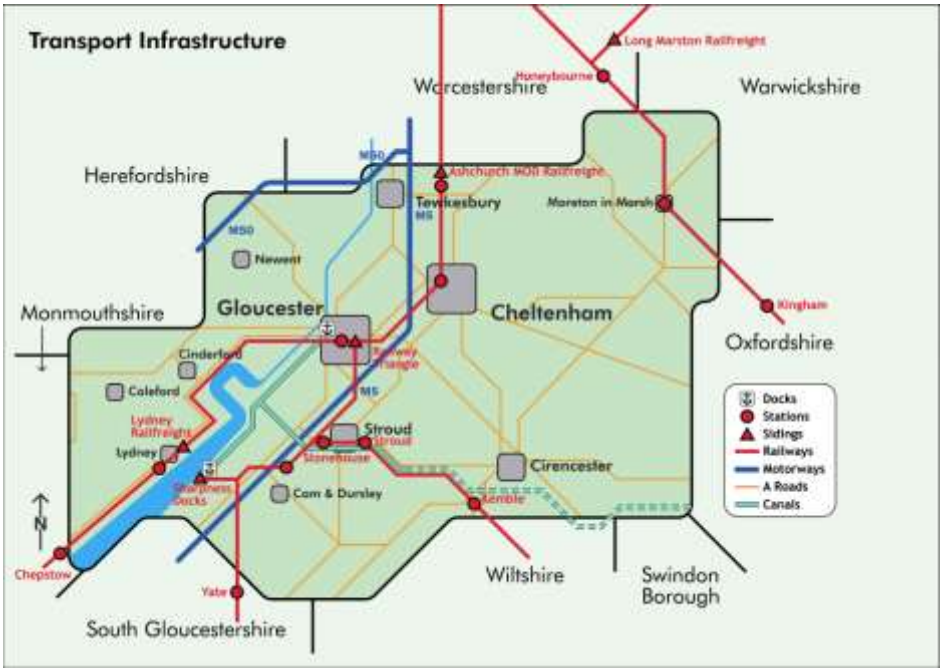
Motorways and major roads

The M5 runs through Gloucestershire linking, northbound, to Birmingham and the West Midlands and, to the south, to Bristol, the South West and Wales. The Gloucestershire section covers close to 30 miles. A dual-carriageway (A417/419) provides access to Swindon and the M4 with a two-hour drive time to Heathrow, three hours to the South East and channel ports. The M50, which connects the west midlands to Wales also runs through the county's northern boundary for a distance of 10 miles.

Rail links

Main line intercity rail services bring London Paddington and Heathrow within two hours reach of Gloucestershire. The regional network also provides access to Birmingham, Bristol, Cardiff, Oxford and Swindon. Gloucestershire has railway stations at Ashchurch (Tewkesbury), Cam and Dursley, Cheltenham, Gloucester, Kemble (near Cirencester), Lydney, Moreton-in-Marsh, Stonehouse and Stroud that account for nearly 5 million passenger journeys each year. The Cross-country mainline bisects Gloucestershire north to south and there is also a route from Gloucester running to South Wales (Cardiff to Midlands line) and from Stonehouse towards the South East (South Cotswolds line). A further line passes through Moreton-in-Marsh in the north east of the County (North Cotswolds line).

Figure 11: Transport Infrastructure in Gloucestershire



Airports

Gloucestershire Airport is centrally located between Gloucester and Cheltenham providing facilities for air transport, executive jets, helicopters, charter flights, flying schools, aero engineering and

maintenance. RAF Fairford is a strategically significant military asset, which has international prominence. Throughout its history it has accommodated both the UK and other air forces, most notable the US. RAF Fairford was also designated as a TransOceanic Abort Landing site during NASA's Space Shuttle programme partially due to its 3km long runway. NASA-trained fire and medical crews were once stationed at the base.

Waterways and Dockside facilities

The historic Gloucester Docks in the heart of the city is now a focal point for water-based leisure activities. Two working dry docks continue to provide ship repair and re-fit facilities with access to the sea through the Gloucester and Sharpness Canal. Sharpness Docks on the Bristol Channel is the county's only remaining commercial port. It provides extensive cargo-handling facilities and port-related services accommodating vessels up to 6,000 dead weight tonnes. Waterbourne transport in the county mainly consists of privately owned small leisure craft and canal barges, although some commercial freight movement has occurred in the recent past. In 2005 attempts were made to re-instigate the barging of minerals – sand & gravel from Ryall Quarry in Worcestershire to Gloucester. The river and the Gloucester and Sharpness canal also provide Gloucestershire with the possibility to develop sustainable waterborne freight transport. This should be encouraged, particularly as other parts of the UK (London in particular) have very successfully developed the infrastructure needed to transport large volumes of waste and construction materials by water.

Public rights of way

Gloucestershire has almost 3,500 miles of footpaths, bridleways and green lanes that make up its public rights of way network (PROW). They are an important landscape element in both rural and urban areas of the County, playing an important part in the daily lives of many people who use them for leisure, exercise and the up-keep of health, or as part of their daily routine. Nationally 15 per cent of all visitors to the countryside go walking, which brings many benefits from supporting the rural economy to improving the health and wellbeing of participants. Three 'National Trails' run through Gloucestershire namely; the Thames Path, the Cotswold Way and Offa's Dyke Path. The PROW network is managed by the County Council who maintain a definitive map of all paths and rights of way in the County. Volunteers and local conservation groups assist in the maintenance of PROW.

Tourist assets

The landscape and historic villages and towns of Gloucestershire are clearly a major material asset. During 2011 Gloucestershire Cathedral was the 7th top free attraction within in the South West in terms of visitor numbers.

Cultural heritage including architectural and archaeological heritage

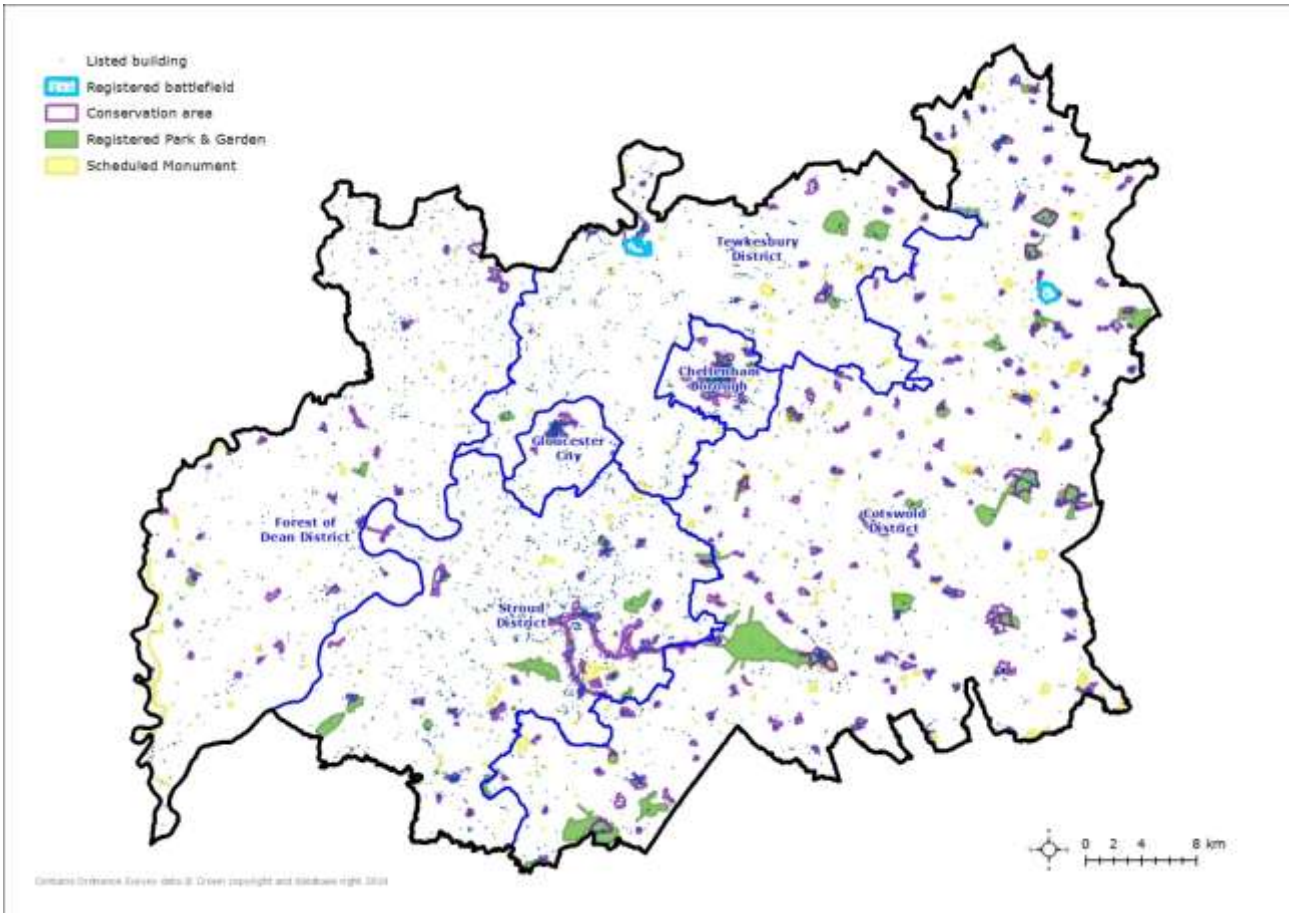
The historic environment of the County has been formed as a result of the activities of human communities over many thousands of years in clearing, farming and settling the landscape. There is extensive evidence of the past in the form of prehistoric settlement and burial sites, Roman towns and villas, medieval churches and other features of more local importance. The historic legacy of agriculture, industry, architecture and social organisation makes a significant contribution to the distinctive landscapes found in Gloucestershire.

There are around 18,000 archaeological sites recorded in the Gloucestershire Sites and Monuments Record. Approximately 521 of these are Scheduled Ancient Monuments of national importance. Archaeological investigations continue to reveal many sites of historical importance in all areas of the County. These range from Neolithic and Iron Age sites, through extensive Roman and Romano British Settlements, important medieval sites, Regency and Georgian buildings, and the legacy of past industrial activities.

Conservation areas and the register of listed buildings held by district councils affords protection to areas of particular architectural or historic interest. The Cotswold district has by far the highest number of conservation areas of any district local authority in Great Britain at 144. There are approximately 100 buildings within the County which are on the Heritage At Risk Register (2011).

Gloucestershire's historic environment designations can be seen on **Figure 12 below.**

Figure 12: Gloucestershire's historic environment designations.



Gloucestershire's natural and historic environment makes an important contribution to the local economy in terms of its tourism value. Both minerals and waste development can have major impacts on their surroundings. Great care must be taken to ensure that such development does not intrude on the archaeological legacy of the County and does not result in damage to their wider settings, or alter their relationship with the wider rural area around them.

Even where visible archaeological remains and elements of the historic environment are not destroyed by minerals development, their setting can be compromised either by the proximity of surface workings themselves or by unsympathetic structures or developments to the infrastructure supporting both surface and below ground minerals operations.

Increased levels of dust produced by minerals development may affect the setting of archaeological and historically significant sites even where these do not impact directly on the monument or structure itself.

Unsympathetic landscape restoration following minerals development can also have a major impact on the setting of surviving archaeological or historically significant remains and may significantly reduce the historic character and legibility of the landscape in which these are sited.

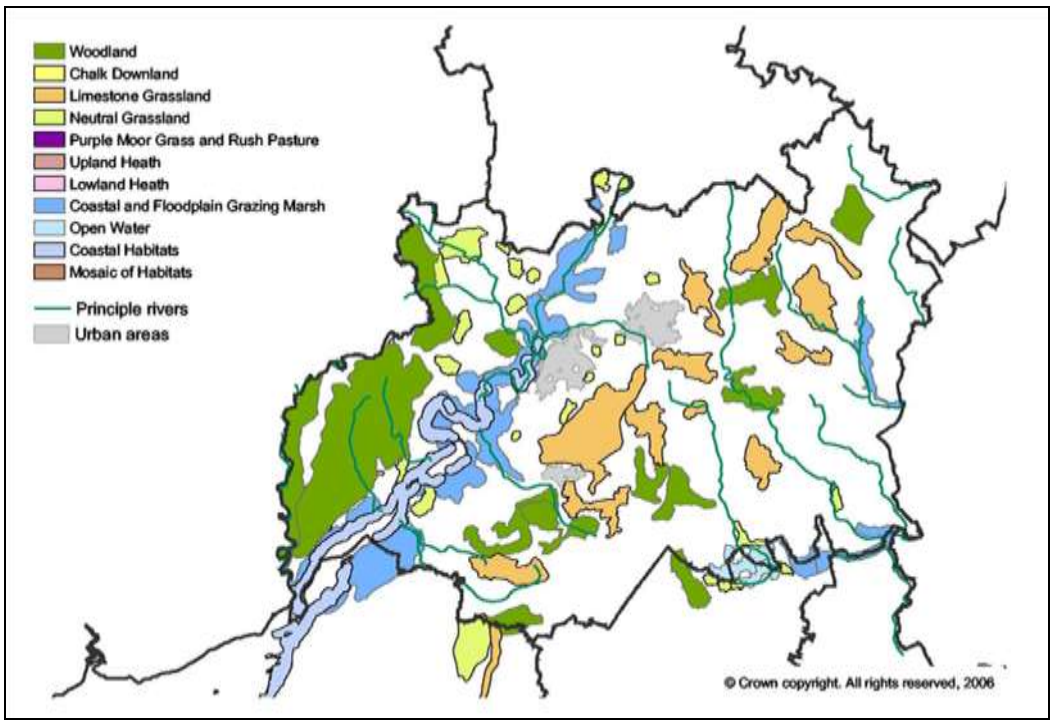
(For information on archaeology and the historic environment see Joint Technical Evidence Paper WCS-MCS 6 Archaeology and the Historic Environment http://www.gloucestershire.gov.uk/extra/article/107668/Evidence-Base-for-the-MCS)

Landscape

Gloucestershire's landscape is characterised by three broad distinct areas. From west to east these are: the Forest of Dean, the Severn Vale and the upland limestone areas of the Cotswolds and Stroud. The Upper Thames Valley, (although a smaller area) may also be regarded as relatively distinct in terms of its landscape character and features. In terms of a more detailed landscape character assessment, the County is divided into 33 distinct areas. The Gloucestershire

Nature Map, launched in the Spring of 2008, identifies the main priority habitats in the County as: Woodland, Unimproved Limestone Grassland, Unimproved Neutral Grassland, Lowland Wetland Grassland and Healthland/Acid Grassland. (See below).

Figure 13: Gloucestershire Nature Map



From: http://gloucestershirebap.org.uk/actionplan/nature-map.php

The different geological formations and soils of each area have determined the nature of the vegetation within the County as well as its building styles and settlement patterns. Many local industries have also left their particular mark on the landscape.

There are five National Character Areas (NCA) within Gloucestershire. These are based on natural lines within the landscape and not on administrative boundaries. The five are Malvern Hills, Forest of Dean and Lower Wye, Severn and Avon Vales, Cotswolds, and Bristol, Avon Valleys and Ridges.

The Forest of Dean is situated on an upland trough of old red sandstone that has been overlaid twice by carboniferous limestone, and then by millstone grit containing iron ores and coal measures. It lies in a hilly area between the Rivers Wye and Severn and is still heavily forested with constrained access.

The Wye Valley, on the Forest of Dean's western boundary, is a designated Area of Outstanding Natural Beauty and contains some of the most important semi-natural woodland in Britain and some of the scarcest trees. The River Wye itself is also important as a largely natural system of high water quality and conservation interest. Settlement in the Forest has tended to be linear, following the watercourses and coal measures and villages are built of the grey-brown and red stone local to the area.

The Forest of Dean is one of England's largest ancient forests containing over 11,000 hectares of woodland. This area forms the largest single area of public access in the County, attracting over 1.5 million visits per year. The area of the Royal Forest still contains extensive areas of old oak woods with abundant flora and fauna in a variety of different habitats.

The area also has a range of habitats on the coal measures and sandstone, which are scarce in the County as a whole. The historic industries of tin mining and coal mining have left local features such as abandoned spoil heaps and dismantled railways that, now regenerated, give distinctive character. 'Free miners' continue to operate very small coal mines in the area and there are many kilometres of old underground mine workings and extensive natural cave systems

which have contributed to a nationally important population of rare lesser and greater horseshoe bats.

The Severn Vale is an area created by the floodplain of the River Severn between the foot of the Cotswold escarpment and the hilly area of the Forest of Dean. It is this area of the County that is most urbanised with Cheltenham and Gloucester and major transport routes concentrated through it. The designated Green Belt between Gloucester and Cheltenham has been successful in defining limits to urban areas, but in recent years it has come under increasing pressure in terms of the need for sustainable communities and efficient transport networks.

The Severn Vale is of particular significance for bird life, with several sites in the floodplain of the River Severn seasonally providing ideal conditions for wintering wildfowl. As an estuarine system the Severn Estuary is an internationally important site.

The area known as 'The Cotswolds' contains a number of different landscape character areas. The dramatic edge landscape of the main escarpment runs south west to north east and is very steep in places, resulting in a strong visual impact. The many indentations within the escarpment run into the Cotswolds. On the north west side of the escarpment are five hills known as outliers. Around Stroud and Winchcombe the landscape is more incised. In the northern part of the Cotswolds there is an area of high wold where the topography is softer with smaller and narrower valleys and broad plateau tops, which merge into a dip slope in the middle of the Cotswolds.

The Oolitic limestone belt from which the Cotswolds are formed has also resulted in unimproved limestone grassland habitat of great wildlife value. The grassland of commons, valleys and scarp contain ancient turf formed by grazing over many centuries and now support an abundance of attractive wild flowers and butterflies. They are also home to one of the prime areas of beech woodland in Britain. Beech woods are habitats for many scarce species. In addition, the unmistakable vernacular of Cotswold villages and towns has made it an international target for recreation and tourism.

The Upper Thames Valley, to the south / south east of the Cotswolds is dominated by the physical impacts of sand and gravel extraction. The development of recreation and natural areas in the Cotswold Water Park provide an excellent example of sensitive restoration of mineral workings. The lakes and wetland areas are gaining in wildlife importance, and increasing in national and international recognition.

The interrelationship between the above factors

There are obviously numerous and complex inter-relationships between all the baseline issues and factors that have been considered in this section of the report. For instance the protection, preservation and enhancement of Gloucestershire's natural environment – its biodiversity, landscape, flora, fauna, soil /air /water quality has a direct relationship with people's quality of life and the benefit to the local economy in terms of the numbers of tourists who visit the County. Population increases will have a significant impact in coming years. Gloucestershire may see pressure for houses and services having an impact on the environment.

In terms of mineral development a balance has to be struck between protecting Gloucestershire's environment, the amenity of its residents and visitors and providing minerals which are needed by society and from which we all derive benefit. Progress needs to be made in reducing the levels of primary minerals that are extracted, through the reduction, reuse and recycling of appropriate materials.

Arguably, of all the issues dealt with in this review of baseline, climate change has the greatest potential to have wide-spread and long lasting social, economic and environmental impacts.

Appendix 5
Policy appraisal matrices

Compatibility of Vision and MLP Objectives with SA objectives

SA objectives	Vision	1. Reuse & Recycling (SR)	2. Resource Management (RM)	3. Provision & Supply (PS)	4. The Environment (ENV)	5. Local communities (LC)	6. Restoration (RA)	7. Transport (MM)
Social								
1. Health and wellbeing	+	+	0	0	0	+	+	+
2. Amenity of local communities	+	+	0	0	0	+	+	+
Economic								
3. Sustainable economic development	++	0	0	++	0	0	+	0
4. Employment opportunities	++	0	0	++	0	+	+	+
5. Safety of commercial or military aerodromes	+	0	0	0	0	+	+	0
6. Conservation of minerals resources	+	++	++	+/-	0	0	0	0
Environmental								
7. Biodiversity	++	+/-	0	+/-	++	0	+	0
8. Landscape	++	+/-	0	+/-	++	0	+/-	0
9. Restoration of mineral sites	++	+	+	0	0	0	++	0
10. Material, cultural and recreational assets	+	0	0	+/-	+	+	+	+
11. Geodiversity	++	0	0	+/-	++	0	+	0
12. Historic environment, heritage assets and their setting	+	0	0	+/-	+	0	+	0
13. Flooding	++	0	0	+/-	+/-	0	+/-	0
14. Soil / land quality	+?	+	+	+/-	+	0	+	0
15. Air quality	+	+/-	0	+/-	+	0	+/-	+
16. Water quality and quantity	++	0	0	+/-	+	0	+/-	0
17. Impacts of lorry traffic on the environment and communities	+	+/-	0	+/-	+	0	+/-	+
18. Climate Change	+	+/-	0	+/-	+	0	+	+

Policy SR01 Maximising the use of secondary and recycled aggregates

SA Objective and Sub Questions	SA Score	Justification
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.	-?	Policy SR01 encourages the use of secondary and recycled aggregates over primary aggregates. In Gloucestershire, the main source of the 100,000 tonnes of recycled aggregates is derived from the reprocessing of waste materials from construction and demolition projects. There is presently no production of secondary aggregate in the county. Yet this is set to change with the development of the Energy from Waste (EfW) Facility at Javelin Park, in Stroud District. It is forecast this EfW facility could produce in the region of 45,000 tonnes per annum of incinerator bottom ash (IBA) aggregate if it operates at its permitted capacity. The facility is due to be operational from 2019 onwards. Other EfW facilities are proposed within the vicinity of Gloucestershire County including Severnside in South Gloucestershire which is proposed to process up to 400,000 tonnes of non-recycled waste[42] which maybe a future viable source of IBA. In addition, the Adopted GCC Waste Local Plan[43] includes policies (e.g. 6 and 12) which permit the recycling of materials in appropriate locations, where it supports sustainable waste management and does not hinder restoration timescales. There may be minor negative effects on the local health and wellbeing of people living and working in Gloucestershire due to impacts such as dust, noise, vibration and traffic associated with the secondary and recycled aggregate facilities. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage. Furthermore, , an increase in the use and production of secondary and recycled aggregates could potentially contribute to a decrease in demand for primary aggregates, which would reduce the potential effects of primary extraction in the longer term, although this is also uncertain.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	As described above, Policy SR01 encourages the use of secondary and recycled aggregates over primary aggregates. There may be minor negative effects on the amenity of local communities in Gloucestershire due to impacts such as noise, vibration and traffic associated with the secondary and recycled aggregate facilities. However, the effects would be uncertain as the potential for effects will depend on the exact nature

[42] http://www.sita.co.uk/news-and-views/our-plans/severnside
[43] http://www.gloucestershire.gov.uk/extra/CHttpHandler.ashx?id=22434&p=0

SA Objective and Sub Questions	SA Score	Justification
		and design of the sites, which would not be known until the planning application stage. In addition, an increase in the use and production of secondary and recycled aggregates could potentially contribute to a decrease in demand for primary aggregates, which would reduce the potential effects of primary extraction in the longer term, although this is also uncertain.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+	Secondary and recycled aggregates are important local and national resources and support sustainable economic growth. They support a wide range of end uses and industries and it is therefore important that there is a sufficient supply of material to supply construction and to provide the infrastructure, buildings, energy and goods that Gloucestershire and the country need. The policy is likely to have a minor positive effect on this SA objective, as it supports the use of secondary/recycled aggregate in construction, which will therefore support economic prosperity and make a positive contribution to the local and national economy.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	Secondary and recycled aggregates are important within new developments and encourage local markets to utilise alternatives to primary won material. This stimulation in local markets may attract more investment thus presenting opportunities for employment. The policy is likely to have a minor positive effect on this SA objective, as it supports the use of secondary/recycled aggregate in construction, which will therefore support employment opportunities and make a positive contribution to the local and national economy; whether urban or rural.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	This policy is unlikely to affect this SA objective and so a negligible effect is identified.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	The intention of this policy is likely to have significant positive effects on this SA objective as supporting the use of secondary/recycled aggregate will reduce the extraction of virgin materials.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy SR01 could potentially lead to minor negative effects for biodiversity, as support for the use of secondary/recycled aggregates in construction also indirectly supports the facilities used to produce them which could have potential impacts on designated sites, protected species or habitats. In contrast, secondary and recycling facilities do not occur in isolation as their facilities

SA Objective and Sub Questions	SA Score	Justification
		are usually located alongside existing construction/demolition, mineral or waste management sites. During the secondary and recycled facilities' construction therefore, potential negative impacts on biodiversity are likely to already occur due to the presence of existing associated infrastructure. Furthermore, secondary and recycled aggregates may reduce demand for primary extraction which has potentially more adverse effects on biodiversity. A minor positive effect is therefore likely resulting in mixed effects overall (minor positive/minor negative). The mixed effects however would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities, which would not be known for new sites until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy SR01 could potentially lead to negative effects for landscape and landscape character, as support for the use of secondary/recycled aggregates in construction also indirectly supports facilities used to produce them which could impact upon the landscape. In contrast, secondary and recycling facilities do not occur in isolation as their facilities are usually located alongside existing construction/demolition, mineral or waste management sites. During the secondary and recycled facilities' construction therefore, potential negative impacts on landscape are likely to already occur due to the presence of existing associated infrastructure. Furthermore, secondary and recycled aggregates may reduce demand for primary extraction which has potentially more adverse effects on Gloucestershire's landscape. A minor positive effect is therefore likely resulting in mixed effects overall (minor positive/minor negative). However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities, which would not be known for new sites until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	This policy is unlikely to affect this SA objective as it relates to secondary and recycled aggregates and not extraction of primary aggregates at minerals sites and so a negligible effect is identified.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	This policy encourages the use of secondary and recycled aggregate in construction. In Gloucestershire, the main source of the 100,000 tonnes of recycled aggregates is derived from the reprocessing of waste materials from construction and demolition

SA Objective and Sub Questions	SA Score	Justification
		projects. There may be minor negative effects on Gloucestershire's material, cultural and recreational assets due to impacts such as dust, noise, vibration and traffic associated with the secondary and recycled aggregate facilities. Secondary and recycling facilities however do not occur in isolation as they are usually located alongside existing construction/demolition, mineral or waste management sites. During the secondary and recycled facilities' construction therefore, potential negative impacts on Gloucestershire's material, cultural and recreational assets are likely to already occur due to the presence of existing associated infrastructure. Furthermore, secondary and recycled aggregates may reduce demand for primary extraction which has potentially more adverse effects on Gloucestershire's material, cultural and recreational assets. A minor positive effect is therefore likely resulting in mixed effects overall (minor positive/minor negative). However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	No effects are expected on this SA objective as secondary/recycling aggregate facilities are most likely to be associated with construction and demolition sites and are unlikely to be located so as to affect geodiversity.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	The policy is likely to have minor negative effects on this SA objective, as some secondary/recycling aggregate facilities could therefore affect nearby heritage assets and their setting due to noise and vibration associated with working. Secondary and recycling facilities however do not occur in isolation as they are usually located alongside existing construction/demolition, mineral or waste management sites. During the secondary and recycled facilities' construction therefore, potential negative impacts on Gloucestershire's historic environment, heritage assets and their setting are likely to already occur due to the presence of existing associated infrastructure. Furthermore, secondary and recycled aggregates may reduce demand for primary extraction which has potentially more adverse effects on historic environment, heritage assets and their setting. A minor positive effect is therefore likely resulting in mixed effects overall (minor positive/minor negative). However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities, which would not be known for new sites until the planning application stage.

SA Objective and Sub Questions	SA Score	Justification
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	+/-?	Supporting the use of secondary/recycled aggregates in construction could also indirectly support facilities used to produce them which may be located in areas at risk of flooding. Secondary and recycling facilities however do not occur in isolation as they are usually located alongside existing construction/demolition, mineral or waste management sites. During the secondary and recycled facilities' construction therefore, potential negative impacts on flooding is likely to already occur due to the presence of existing associated infrastructure. Furthermore, secondary and recycled aggregates may reduce demand for primary extraction which could potentially increase the risk of flooding. A minor positive effect is therefore likely resulting in mixed effects overall (minor positive/minor negative). However, it is recognised that secondary/recycled aggregates facilities would be subject to the policies in the Gloucestershire Waste Local Plan and the NPPF, and are therefore unlikely to be located in areas at risk of flooding, and as such, this policy is considered unlikely to have an effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The exact land take and location of any future secondary/recycling aggregate facilities will not be known until the planning application stage for new sites. Therefore, the potential loss of high quality agricultural land (i.e. Grades 1 – 3) is also unknown at this stage. However, the GCC Waste Local Plan provides a steer towards the location of secondary/recycled aggregate facilities away from greenfield sites, and are generally developed alongside existing waste, construction/demolition or mineral infrastructure, therefore not on greenfield land. As such, this policy is considered unlikely to have an effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	+/-?	Policy SR01 may have a minor negative impact on this SA objective, as the option supports the use of secondary/recycled aggregates in construction which indirectly supports the facilities used to produce them which are likely to involve activities (e.g. lorry traffic) that may negatively affect air quality. For example, due to the proximity of sensitive receptors and the distance mineral related traffic has to travel. Secondary and recycling facilities however do not occur in isolation as they are usually located alongside existing construction/demolition, mineral or waste management sites. During the secondary and recycled facilities' construction therefore, potential negative impacts to air quality are likely to already occur due to the presence of existing associated infrastructure. Furthermore, secondary and recycled aggregates may reduce

SA Objective and Sub Questions	SA Score	Justification
		demand for primary extraction that contributes to poor air quality. A minor positive effect is therefore likely, resulting in mixed effects overall (minor positive/minor negative). However, this would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities, which would not be known for new sites until the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	+/-?	Policy SR01 may have a minor negative impact on this SA objective, as the option supports the use of secondary/recycled aggregates in construction which indirectly supports the facilities used to produce them which are likely to involve activities (e.g. washing of materials) that may negatively affect water quality. Secondary and recycling facilities however do not occur in isolation as they are usually located alongside existing construction/demolition, mineral or waste management sites. During the secondary and recycled facilities' construction therefore, potential negative impacts to water quality are likely to already occur due to the presence of existing associated infrastructure. Furthermore, secondary and recycled aggregates may reduce demand for primary extraction that contributes to poor water quality. A minor positive effect is therefore likely, resulting in mixed effects overall (minor positive/minor negative). However, this would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities, which would not be known for new sites until the planning application stage.
17. 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	-?	Policy SR01 is likely to have minor negative effects on this SA objective, as the policy supports the use of secondary/recycled aggregates in construction, which indirectly supports the facilities used to produce them. While these facilities involve less road miles compared to primary aggregate sites due to the economics and distances involved in the supply of alternative aggregates, facilities will still involve lorry traffic movements, which at some sites may comprise multiple movements per day. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities, and their traffic levels, lorry routing and access arrangements, which would not be known for new sites until the planning

SA Objective and Sub Questions	SA Score	Justification
fuels		application stage. Therefore, these effects are uncertain.
18. To reduce contributions to and to adapt to Climate Change.	+	Policy SR01 may have minor positive effects on greenhouse gas emissions as secondary/recycled aggregate facilities support the reduction in primary aggregate extraction, which is an intensive industry that contributes to emissions of greenhouse gases.

Policy MS01 Non-minerals development within MSAs

SA Objective and Sub Questions	SA Score	Justification
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.	+/-?	Through Policy MS01, Mineral Safeguarding Areas (MSAs) may potentially restrict non-mineral developments that could otherwise have a negative effect on the health and wellbeing of people. However, the MSAs may lead to more and/or the continuation of mineral activities that could have a detrimental impact on the health and wellbeing of people. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed minor positive/minor negative effect is likely for this SA objective. However, effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within MSAs, which for some will not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+/-?	Through Policy MS01, MSAs may potentially restrict non-mineral developments that could otherwise have a negative effect on the amenity of local communities. However, the MSAs may lead to more and/or the continuation of mineral activities that could have a detrimental impact on local amenity. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed minor positive/minor negative effect is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within MSAs, which for some will not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+/-	Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs, including locally for Gloucestershire. Through Policy MS01, MSAs should help safeguard mineral resources from sterilisation and ancillary facilities from conflicting land uses, and may therefore have a positive effect on economic development related to minerals. However, as non-mineral developments may potentially be restricted within MSAs, the policy could also have negative effects on economic development, as Safeguarding Areas my reduce

SA Objective and Sub Questions	SA Score	Justification
		opportunities for other types of development. Yet the policy outlines that MSAs will only be permitted if the need for non-mineral development is greater than mineral development. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Therefore, overall this policy is likely to have mixed significant positive/minor negative effects on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+/-	Minerals are essential to support sustainable economic growth. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs, including locally for Gloucestershire. Through Policy MS01, MSAs should help safeguard mineral resources from sterilisation and ancillary facilities from conflicting land uses, and may therefore have a positive effect on economic development related to minerals, which in turn will have positive effects on employment opportunities associated with economic development. However, as non-mineral developments may potentially be restricted within MSAs, the policy could also have negative effects on employment opportunities. The policy does state that MSAs will only be permitted if the need for non-mineral development is greater than mineral development. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Therefore, overall this policy is likely to have mixed minor positive/minor negative effects on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	+/-?	Through Policy MS01, MSAs may lead to more mineral extraction activities, including sand and gravel extracted in the Cotswolds Water Park which is located within and in close proximity to the safeguarding zone for RAF Fairford. Therefore, the policy could have minor negative effects on the safety of commercial or military aerodromes due to the potential for birds, due to water based site restoration, to provide a hazard to aircraft. However, the policy for MSAs is more focused on whether non-minerals developments should be permitted within the MSAs and states that non-minerals development within MSAs will be permitted provided "it is appropriate and practicable to extract the mineral prior to non-minerals development taking place" or "the overriding need for the development outweighs the desirability to prevent safeguarded minerals from being

SA Objective and Sub Questions	SA Score	Justification
		sterilised". Therefore, overall Policy MS01 could have mixed minor positive/minor negative effects on this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which for some will not be known until the planning application stage. Furthermore, it must be emphasised, that the process of safeguarding does not mean that extraction will be automatically allowed.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	Policy MS01 will have significant positive effects on this SA objective, as the policy ensures that mineral resources will be protected from unnecessary sterilisation by other development, whilst not creating a presumption that resources defined in MSAs will be worked, and ensures that minerals resources will be adequately and effectively considered in all land-use planning decisions.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+?	Policy MS01 may have minor positive effects on biodiversity, as the potential prevention of non-mineral development in Safeguarding Areas that would prejudice mineral workings may prevent development that could harm biodiversity. Also, areas used for mineral activity within Safeguarding Areas, in the long-term, could benefit biodiversity as a result of the restoration of mineral sites. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which will not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MS01 may have minor positive effects on landscape, as the potential prevention of non-mineral development in Safeguarding Areas that would prejudice mineral workings may prevent development that could negatively impact on the landscape. However, the Safeguarding Areas may lead to more mineral workings (e.g. where the mineral needs to be worked before non-mineral development can take place) or the continuation of ancillary mineral facilities that could have a detrimental impact on the landscape. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which for some will not be known until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including	+?	Policy MS01 may potentially restrict non-mineral developments that may not be able to be restored to such a high standard, or be able to provide benefits to conservation and

SA Objective and Sub Questions	SA Score	Justification
the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.		biodiversity enhancement as well as mineral sites. Furthermore, Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) or the continuation of ancillary mineral facilities that could provide benefits via site restoration. Therefore, minor positive effects are expected for this SA objective. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which for some will not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	Policy MS01 may potentially restrict non-mineral developments that could otherwise have a negative effect on Gloucestershire's material, cultural and recreational assets (e.g. Public Rights of Way). However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) or the continuation of ancillary mineral facilities that could have a detrimental impact on these assets. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which for some will not be known until the planning application stage.
11. To protect conserve and enhance geodiversity in Gloucestershire.	++?	Policy MS01 should have a significant positive effect with regard to the protection of geo-diversity, as safeguarding minerals is likely to protect minerals that may be accessed for extraction, and therefore may be preserved and be accessible for study and enjoyment in the future. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which will not be known until the planning application stage.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	Policy MS01 may potentially restrict non-mineral developments that would otherwise have a negative effect on the historic environment, heritage assets and their setting. However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) or the continuation of ancillary mineral facilities that would have a detrimental impact on the historic environment. It must be emphasised, however, that the process of

SA Objective and Sub Questions	SA Score	Justification
		safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which for some will not be known until the planning application stage.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	Flooding is unlikely to be affected by Policy MS01, therefore no effect is expected for this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	?	The policy aims to prevent minerals sterilisation. Through minerals safeguarding however, mineral extraction could occur, which depending on the site location, could result in the loss of agricultural land. An uncertain effect is identified as the potential for effects will depend on the exact location and use of the site as well as the nature of proposals which will not be known until the planning application stage.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	Air quality is unlikely to be affected by Policy MS01, therefore no effect is expected for this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	?	The policy aims to prevent minerals sterilisation. Through minerals safeguarding however, mineral extraction could occur, which depending on the site location, could affect ground and surface water on a potential site. This however, would depend on the type of mineral worked, site design and characteristics, and the geological conditions which will not be known until the planning application stage. As such, an uncertain effect is identified.
17. 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	+/-?	Policy MS01 may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to the adverse impacts of lorry traffic. However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) or the continuation of ancillary mineral facilities that could have a detrimental impact due to the adverse impacts of lorry traffic. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any

SA Objective and Sub Questions	SA Score	Justification
fuels		effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas, which for some will not be known until the planning application stage.
18. To reduce contributions to and to adapt to Climate Change.	0	Climate change is unlikely to be affected by Policy MS01, therefore no effect is expected for this SA objective.

Policy MS02 Non-minerals development within MCAs

SA Objective and Sub Questions	SA Score	Justification
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.	++	Through Policy MS02, Mineral Consultation Areas (MCAs) include a distance of 250m between mineral developments and other land-uses. This offers a means of assessing whether incompatibility may occur in the future, which could involve impacts on health and well-being. The policy is specifically seeking to address the content of the objective and as such the positive effect is expected to be significant.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	++	Through Policy MS02, MCAs include a distance of 250m between mineral developments and other land-uses. This offers a means of assessing whether incompatibility may occur in the future which could result in amenity impacts on residential properties and / or other uses f they were allowed to be located too close to mineral sites. The policy is specifically seeking to addresses the content of the objective and as such the positive effect is expected to be significant.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	Policy MS02 states that non-minerals development that is proposed within an MCA will not be permitted unless "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". This provision introduces a degree of flexibility that recognises those circumstances where restricting non-minerals development could represent a worse situation than the risks posed by incompatible non-minerals development. An uncertain effect is also noted because the potential for effects will depend on the exact nature and design of proposals within MCAs and their relationship to existing minerals development, which would not be known until planning applications come forward.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+?	Policy MS02 states that non-minerals development within an MCA will not be permitted unless "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". As this consideration encourages schemes with economic benefits, which could to lead to non-minerals employment opportunities, a minor positive effect is identified on this SA objective. An uncertain effect is also noted because the potential for effects will depend on the

SA Objective and Sub Questions	SA Score	Justification
		exact nature and design of proposals within MCAs, which will not be known until planning applications come forward.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	Aerodromes are unlikely to be affected by this policy, therefore no effect is expected for this 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.	++	Policy MS02 is intended to enable existing mineral workings and areas of potential working to continue without being unreasonably hindered, by safeguarding them against potentially incompatible non-minerals development. Therefore a significant positive effect is expected on SA objective 6 because Policy MS02 will help to maintain the supply of aggregates and minerals sufficient for the needs of society.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MS02 may have minor positive effects on biodiversity, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent development that could harm biodiversity. However, the continued extraction of minerals within the MCAS may have its own impacts on biodiversity. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MS02 may have minor positive effects on landscape, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent new development that could negatively impact on the landscape. However, the continued extraction of minerals within the MCAS may have its own impacts on landscape. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	The designation of MCAs will not affect the restoration of mineral sites, and no effect is expected on SA objective 9.
10. To protect conserve and enhance	+/-?	Policy MS02 may have minor positive effects on material, cultural and recreational

SA Objective and Sub Questions	SA Score	Justification
Gloucestershire's material, cultural and recreational assets.		assets, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent development that could harm these assets. However, the continued extraction of minerals within the MCAS may have its own impacts on these assets. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.
11. To protect conserve and enhance geodiversity in Gloucestershire.	+?	The designation of MCAs around existing and planned mineral workings could have a minor positive effect on geo-diversity as the extraction of minerals can help to expose geological faces and MCAs would enable mineral extraction to continue unhindered. Therefore a minor positive effect is expected, however, this is uncertain as it depends on whether the geology within the extraction site is of particular geo-diversity value.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	Policy MS02 may have minor positive effects on heritage assets and their settings, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent development that could harm these assets. However, the continued extraction of minerals within the MCAS may have its own impacts on heritage assets. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	+/-?	Policy MS02 may have minor positive effects on flooding, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent new development that could increase the risk of flooding. However, the continued extraction of minerals within the MCAS may have its own impacts on flooding. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is

SA Objective and Sub Questions	SA Score	Justification
		uncertain.
14. To protect and enhance soil / land quality in Gloucestershire.	+/-?	Policy MS02 may have minor positive effects on soil quality, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent new development that could involve the loss of high quality agricultural land. However, the continued extraction of minerals within the MCAS may have its own impacts on loss of agricultural land. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	+/-?	Policy MS02 may have minor positive effects on air quality, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent new development that could increase traffic and reduce air quality. However, the continued extraction of minerals within the MCAS may have its own impacts on air quality. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	+/-?	Policy MS02 may have minor positive effects on water quality and quantity, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent new development that could increase pressure on water supply and treatment. However, the continued extraction of minerals within the MCAS may have its own impacts on water quality and quantity. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.
17. To reduce the adverse impacts of lorry traffic on the environment and communities through means such as: a) reducing the need to travel	+/-?	Defining MCAs of 250m around minerals infrastructure seeks to restrict non-mineral developments that could otherwise contribute towards increased vehicular movements including lorry traffic and thus increase the risk of generating unacceptable negative

SA Objective and Sub Questions	SA Score	Justification
b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels		effects on the environment and communities, thereby resulting in a minor positive effect. . However, the MCAs should ensure that existing and planned minerals sites continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts due to lorry traffic. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of minerals infrastructure within Safeguarding Areas.
18. To reduce contributions to and to adapt to Climate Change.	+/-?	Policy MS02 may have minor positive effects on climate change, as the potential prevention of non-mineral development in MCAs that would prejudice mineral workings may prevent new development that could increase traffic and associated greenhouse gas emissions. However, continued extraction of minerals within the MCAs will likely have its own impacts on climate change due to lorry movements to and from minerals sites, which could be more significant than alternative non-minerals development or constrained mineral operations. Therefore, a mixed minor positive and negative effect is expected. It must be emphasised, however, that the definition of the MCAs does not mean that non mineral development cannot take place within MCAs, as it may meet the requirements of "it forms part of a planned development strategy or regeneration scheme that has wider social, environmental and / or economic benefits, which will clearly outweigh the desire to safeguard mineral working or its potential within an MCA". Therefore, this effect is uncertain.

Policy MS03 Safeguarding mineral infrastructure

SA Objective and Sub Questions	SA Score	Justification
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.	+/-?	Policy MS03 seeks to restrict non-mineral developments that could otherwise have a negative effect on the health and wellbeing of people and/or conflict with the existing minerals operations. However, the safeguarding areas will ensure that existing minerals infrastructure continues to operate unaffected by incompatible developments, which may therefore prolong any existing impacts on the health and wellbeing of people. It must be emphasised, however, that the process of safeguarding does not mean that that non mineral development cannot take place. Overall, a mixed minor positive/minor negative effect is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of minerals infrastructure within Safeguarding Areas.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+/-?	Policy MS03 seeks to restrict non-mineral developments that could otherwise have a negative effect on the amenity of local communities and/or conflict with the existing minerals operations. However, the safeguarding areas will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong any existing impacts on local amenity. It must be emphasised, however, that the process of safeguarding does not mean that that non mineral development cannot take place. Overall, a mixed minor positive/minor negative effect is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of minerals infrastructure within Safeguarding Areas.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+/-	Minerals are essential to support sustainable economic growth and our quality of life. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs, including locally for Gloucestershire. Policy MS03 makes provision to help safeguard minerals infrastructure from incompatible development that may hinder future operations and may therefore have a positive effect on economic development related to minerals. However, as non-mineral developments may potentially be restricted within the safeguarding areas of up to 150m around mineral infrastructure, the policy could also have negative effects on economic development, as safeguarding areas may reduce

SA Objective and Sub Questions	SA Score	Justification
		opportunities for other types of development. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Therefore, overall this policy is likely to have mixed minor positive/minor negative effects on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+/-	Minerals are essential to support sustainable economic growth. It is therefore important that there is a sufficient supply of material to provide the infrastructure, buildings, energy and goods that the country needs, including locally for Gloucestershire. The safeguarding areas of up to 150m within Policy MS03 should help safeguard minerals infrastructure from incompatible development and may therefore have a positive effect on economic development related to minerals, which in turn will have positive effects on employment opportunities associated with economic development. However, as non-mineral developments may potentially be restricted within these safeguarding areas, the policy could also have negative effects on employment opportunities. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Therefore, overall this policy is likely to have mixed minor positive/minor negative effects on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	Safeguarded minerals infrastructure is unlikely to affect this 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.	++	Policy MS03 is likely to have significant positive effects on this SA objective, as the policy ensures that minerals infrastructure will be safeguarded from incompatible development within 150m of the minerals infrastructure, and thereby ensures that minerals infrastructure will be adequately and effectively considered in all land-use planning decisions.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Safeguarding areas of 150m around minerals infrastructure may have minor positive effects on biodiversity, as the potential prevention of incompatible development that would prejudice mineral workings may prevent development that could harm biodiversity. However, the safeguarding areas will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on biodiversity. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of Minerals Infrastructure within Safeguarding Areas.

SA Objective and Sub Questions	SA Score	Justification
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Safeguarding areas of 150m around minerals infrastructure may have minor positive effects on landscape, as the potential prevention of incompatible development in safeguarding areas that would prejudice mineral workings may prevent development that could negatively impact on the landscape. However, the safeguarding areas will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on landscape. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of minerals infrastructure within safeguarding Areas.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	Safeguarded minerals infrastructure is unlikely to affect this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	Safeguarding areas of 150m around minerals infrastructure may potentially restrict non-mineral developments that could otherwise have a negative effect on Gloucestershire's material, cultural and recreational assets (e.g. Public Rights of Way). However, the safeguarding areas of 150m will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on Gloucestershire's material, cultural and recreational assets. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of minerals infrastructure within Safeguarding Areas.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	Safeguarded minerals infrastructure is unlikely to affect this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	Safeguarding areas of 150m around minerals infrastructure will potentially restrict non-mineral developments that could otherwise have a negative effect on the historic environment, heritage assets and their setting. However, the safeguarding areas of

SA Objective and Sub Questions	SA Score	Justification
		150m will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on the historic environment, heritage assets and their setting. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of minerals infrastructure within Safeguarding Areas.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	+/-?	Policy MS03 may have minor positive effects on flooding as the potential prevention of non-mineral development within safeguarding areas could reduce the risk of flooding either through the stopping of a development that could be more susceptible to flooding or intensified development. However, the continued operations of mineral safeguarding sites may have their own impacts on flooding. Therefore, a mixed minor positive and negative effect is expected..
14. To protect and enhance soil / land quality in Gloucestershire.	0	Soil/land quality is unlikely to be affected by Policy MS03.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	+/-?	Policy MS03 may have minor positive effects on air quality as the potential prevention of non-mineral development within safeguarding areas could reduce the risk of air pollution either through the stopping of a more polluting alternative activity or cumulative impacts associated with intensified development. However, the continued operations of mineral safeguarding sites may have their own impacts on air pollution. Therefore, a mixed minor positive and negative effect is expected.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	+/-?	Policy MS03 may have minor positive effects on water quality and quantity as the potential prevention of non-mineral development within safeguarding areas could reduce impacts either through the stopping of a more polluting alternative activity or cumulative water impacts associated with intensified development. However, the continued operations of mineral safeguarding sites may have their own impacts on water quality and quantity. Therefore, a mixed minor positive and negative effect is expected.
17. 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	+/-?	Safeguarding areas of 150m around minerals infrastructure may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to the adverse impacts of lorry traffic. However, the safeguarding areas of 150m will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts

SA Objective and Sub Questions	SA Score	Justification
of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels		due to lorry traffic. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of minerals infrastructure within Safeguarding Areas.
18. To reduce contributions to and to adapt to Climate Change.	+/-?	Policy MS03 may have minor positive effects on climate change as the potential prevention of non-mineral development within safeguarding areas could reduce climate change impacts either through the stopping of more fossil-fuel intensive activities or cumulative impacts associated with intensified development. However, the continued operations of mineral safeguarding sites may have their own climate change impacts Therefore, a mixed minor positive and negative effect is expected.

Policy MW01 Aggregate provision

SA Objective and Sub Questions	SA Score	Justification
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.	+/-?	Policy MW01 may have a negative effect on local communities and the health and wellbeing of those living, working and visiting the county by virtue of facilitating aggregate mineral working, which has the potential for impacts on communities and people's health and wellbeing due to dust from blasting/ drilling and other sources (e.g. haul roads, machinery and stockpiles) – particularly near to proposed sites. Effects however, would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage. However, the policy also supports maintaining an adequate and steady supply of aggregate minerals, which is vital for the development and maintenance of public infrastructure (road, services, healthcare etc.), and economic development and growth more generally. These matters have an important role to play in establishing sustainable communities. As a consequence, a mixed minor positive and negative effect is anticipated.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	Policy MW01 may have a minor negative impact on the local amenity of communities, as the policy aim supports aggregate operations to ensure an adequate and steady supply of aggregates can meet predicted needs. Therefore, this may continue to give rise to potential impacts on local communities such as dust from blasting/ drilling and other sources (e.g. haul roads, machinery and stockpiles), vibration, noise and traffic congestion. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage. Furthermore, research undertaken for the government in 1995[44] excluded any health effects of dust generated by surface mineral operations, and research for the former Department for the Environment, Transport and the Regions (DETR) found that practice on the assessment and control of noise at surface mineral workings had improved; thereby emphasising that effects are unlikely to be greater than minor. Therefore, the policy could have minor negative, uncertain effects on this SA objective.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	Aggregate minerals are important local and national resources essential to supporting sustainable economic growth. They support most sectors of economy either directly and indirectly and are vital to the future provision of public infrastructure. The policy is likely to have a minor positive effect on this SA objective by facilitating support for increased economic performance which will undoubtedly create job opportunities and also facilitating solutions to mobility demands within workforce including from differing social and ethnic backgrounds. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.

SA Objective and Sub Questions	SA Score	Justification
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+?	Provision for the working of aggregates is likely to have a positive effect on the diversification of rural employment in the county either directly through jobs in extraction industries, but also supporting businesses related to them. The positive effects may also spread to employment more generally in the economy – such as in urban areas, through the provision of steady and adequate supply of raw materials that underpins economic growth. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	Policy MW01 could have a negative effect on the safety of aerodromes, simply through increased risk of hazard (e.g. bird strike) resulting from the potential for aggregate mineral working to take place within the sphere of influence of aerodrome facilities. As a consequence, a mixed minor positive and negative effect is anticipated. Some degree of uncertainty also exists as full details of future development proposals (including restoration) will not be known until the planning application stage.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	Policy MW01 could have a minor positive effect in terms of providing for the supply of aggregates sufficient for the needs of society, as the core aim of the policy is to facilitate steady and adequate supplies.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MW01 could potentially lead to negative effects for biodiversity, as proposals for primary aggregate minerals could have potential impacts on designated sites, protected species or habitats. However, many sites may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MW01 could potentially lead to negative effects on landscape quality through facilitating intrusive mineral working activities. This is, especially the case where sites could be located either within or near to the Cotswolds or Wye Valley AONBs (e.g. for the working of crushed rock limestone)[45]. However, the policy aim could also lead to some positive effects, as a result of landscape improvements created through

[45] See paragraphs 40-44 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
		sympathetic restoration of sites following the cessation of working. Overall the policy is anticipated to have mixed, minor positive and minor negative effects on this SA objective. Some degree of uncertainty also exists as full details of future development proposals will not be known until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	In most cases proposals for the extraction of minerals, including aggregates, will have the potential to be restored to a high standard, achieving maximum after use benefits and enhancing the landscape. Therefore, the policy is likely to have minor positive effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	Policy MW01 could have a minor negative effect on this SA Objective, as primary aggregate proposals could have impacts on access to and enjoyment of nearby material, cultural or recreation assets. However, the policy could support sites which could have potential minor positive effects on enhancing recreational facilities (e.g. Public Rights of Way) through diversion of PRoWs and restoration proposals. However, these would be uncertain as they would not be known until the planning application stage, and where there is the potential for effects upon recreation they will be temporary.
11. To protect conserve and enhance geo-diversity in Gloucestershire.	+/-?	The policy may lead to minor negative effects as the continued extraction of primary aggregate may uncover and harm geological interests. However, these sites can also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of sites, which would not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive and minor negative effects on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	The policy is likely to have minor negative effects on this SA objective, as some aggregate sites (particularly crushed rock) are intensive and could therefore negatively affect the historic environment (e.g. archaeology), heritage assets and their setting as a result of blasting. However, some sites may not be as intensive and be able to preserve findings and therefore benefit our understanding of the local archaeology or contribute towards the local vernacular. The effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of sites, which would not be known until the planning application stage. Therefore, the policy is likely to have

SA Objective and Sub Questions	SA Score	Justification
		uncertain, mixed minor positive/minor negative effects on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	This policy is expected to have an uncertain, minor negative effect on flood risk areas, as it supports aggregate operations within the ten Allocations, and the Atkins hydrogeological reports have identified potentially significant effects on flood risk for all of the ten Allocations, due mainly to backfilling during restoration using low permeability material. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward within the Allocations, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	Sites which come forward and are supported by this policy are likely to range from small to medium scale (i.e. less than 20ha) to large (i.e. over 20ha). However, the exact land take and location according to agricultural land quality (i.e. Grades 1 – 5), and whether improvements to soil quality through site restoration are possible; will not be known until the planning application stage, therefore effects on this SA Objective are likely to be minor negative uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-?	The policy may have a minor negative impact on this SA objective, as it supports aggregate operations to ensure an adequate and steady supply of aggregates can meet predicted needs. Therefore, primary aggregate proposals will involve activities (e.g. lorry traffic) that may negatively affect air quality, for example, due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the strategic highway network. Also, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage. Therefore, the policy aim could have minor negative, uncertain effects on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	This policy is expected to have an uncertain, minor negative effect on water quality and quantity, as it supports aggregate operations within the ten Allocations, and the Atkins hydrogeological reports have identified potentially low, moderate and significant effects on water quality and quantity for all of the ten Allocations, due mainly to dewatering and diversion of groundwater, and increases in suspended solids or discharges of polluted water. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward within the Allocations, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts.

SA Objective and Sub Questions	SA Score	Justification
17. 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	-?	This policy is likely to have minor negative effects on this SA objective, as it supports aggregate operations to ensure an adequate and steady supply of aggregates can meet predicted needs. Therefore, primary aggregate proposals will involve lorry traffic movements, which as some sites may comprise multiple movements per day. The exact location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage, therefore these effects are uncertain.
18. To reduce contributions to and to adapt to Climate Change.	+/-?	Policy MW01 will likely to have a negative effect upon efforts to tackle climate change by virtue of facilitating aggregate working. This activity is energy intensive and uses fossils fuels. Nevertheless, the policy advocates the making use of local provision, which should diminish the need to import aggregates from distance that carries a larger carbon footprint. Consequently, overall a mixed minor positive and negative effect is anticipated. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.

Policy MW02 Natural building stone

SA Objective and Sub Questions	SA Score	Justification
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/-?	Building stone sites are typically small scale operations and are less intensive than aggregates quarries. Therefore, impacts associated with these operations (e.g. dust, noise, and traffic levels) are less likely, and where they do occur they will be less intensive, meaning effects on the health and wellbeing of people living and working in Gloucestershire are likely to be minor. Therefore, this policy is likely to have minor negative effects on this SA objective, however, in some cases there will be negligible or no effects due to the small scale and rural location of building stone workings. The effects would be uncertain as the potential for effects will depend on the exact nature and design of the building stone workings, which would not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0/-?	Building stone sites are typically small scale operations and are less intensive than aggregates quarries. Therefore, impacts associated with these operations (e.g. dust, noise, vibration and traffic levels) are less likely, and where they do occur they will be less intensive, meaning effects on the amenity of local communities are likely to be minor. Therefore, this policy is likely to have minor negative effects on this SA objective, however, in some cases there will be negligible or no effects due to the small scale and rural location of building stone workings. The effects would be uncertain as the potential for effects will depend on the exact nature and design of the building stone workings, which would not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	Policy MW02 may have a positive effect on sustainable economic development, including for all social and ethnic backgrounds by virtue of facilitating building stone working which is a local employer. There is also the potential for indirect employment opportunities through the transportation of materials and / their subsequent application in different end-use products (i.e. manufacturing, marketing and sales). However, the policy is only likely to have a minor positive effect on the SA objective on the grounds that the scale of impact is unlikely to significant at the county-level. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
4. To provide employment opportunities in both rural and urban	+?	Policy MW02 may have a positive effect on employment by virtue of facilitating building

SA Objective and Sub Questions	SA Score	Justification
areas of the County, promoting diversification in the economy.		stone working which is a local employer. There is also the potential for indirect employment opportunities through secondary processing[46], transportation of materials and / their subsequent application in different end-use products (i.e. manufacturing, marketing and sales). Collectively the impact on employment may occur both in rural and urban areas. However, the policy is only likely to have a minor positive effect on the SA objective on the grounds that the scale of impact is unlikely to significant at the county-level. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	Policy MW02 is unlikely to affect this SA objective, as the county's building stone resources are not located in areas where they are likely to have an influence upon aerodrome safety[47].
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	Policy MW02 could have a minor positive effect in terms of the conservation of mineral (building stone) resources from inappropriate development. The core aim of the policy is to facilitate sufficient supplies of mineral that will meet local need, including maintenance of the historic built environment.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MW02 could potentially lead to negative effects for biodiversity, as proposals for the winning and working of building and roofing stones could have potential impacts on designated sites, protected species or habitats. However, the policy could also lead to positive effects, as building stone sites may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. Although, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the building stone workings, which would not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MW02 could potentially lead to negative effects for landscape designations and landscape character due to the impacts of building stone quarries. This is especially the

[46] See paragraph 162 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)
[47] See paragraphs 40-44, 49-50 and 379 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
		case where sites are located either within or nearby to the Cotswolds or Wye Valley AONBs[48]. The provision of natural building stone material supports the maintenance of historic built assets and promotes high quality design – elements that support existing and enhanced landscape character, especially within the county's AONB designations[49]. However, the policy could also lead to positive effects, as building stone sites are small scale and less likely to have a visual impact on the landscape, and the use of natural local stones will be protect and enhance the local landscape and setting of designations. Furthermore, the policy may lead sympathetic restoration of sites which could have positive effects on landscape character. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the building stone workings, which would not be known until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	In most cases proposals for the winning and working of natural building and roofing stones will have the potential to be restored to a high standard, achieving maximum after use benefits and enhancing the landscape. Therefore, Policy MW02 is likely to have minor positive effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the building stone workings, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	This policy will help to conserve and maintain the local distinctiveness of Gloucestershire and support the use of traditional, local building stones, thereby conserving and enhancing Gloucestershire's material, cultural and recreational assets. However, the policy may permit sites which could have potential effects on the access to and the enjoyment of recreational facilities (e.g. Public Rights of Way), although these would be uncertain as they would not be known until the planning application stage, and where there is the potential for effects upon recreation they will be temporary. Therefore, this policy is likely to have mixed minor positive/minor negative, uncertain effects on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	+/-?	Policy MW02 may lead to minor negative effects as the working and winning of building and roofing stone may uncover and harm geological interests. However, these sites can also potentially contribute to geodiversity by preserving and conserving geological features, which is more likely to occur at less intensive mineral sites such as building and roofing stone. However, the effects would be uncertain as the potential for effects

[48] See paragraphs 40-44 and 159 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

[49] See paragraph 156 and the references afforded to paragraph 370 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
		will depend on the exact nature and design, and location of the building stone workings, which would not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive and minor negative effects on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	++/-?	Policy MW02 will help to conserve the historic environment in Gloucestershire and maintain its local distinctiveness, in some cases conserving buildings using similar, local building stones, thereby conserving and enhancing Gloucestershire's historic environment, heritage assets and their setting. Sites permitted by the policy may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, this policy may also have minor negative effects on this SA objective, as some sites may involve activities that could negatively affect the historic environment (e.g. archaeology), heritage assets and their setting due to transport, noise or vibration, or extraction methods. Also, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of sites, which will not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed significant positive/minor negative effects on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	Policy MW02 may have a negative effect upon the risk of flooding by virtue of facilitating building stone working, which has the potential to be disruptive to existing hydrological systems – particularly at / or near to proposed working sites. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	This policy is likely to permit small to medium scale (i.e. less than 20ha) building and roofing stone sites. However, the exact land take and location according to agricultural land quality (i.e. Grades 1 – 5), and whether improvements to soil quality through site restoration are possible; will not be known until the planning application stage, therefore effects on this SA Objective are likely to be minor negative uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	+/-?	Policy MW02 is likely to have mixed minor positive, minor negative effects on this SA objective. This is because building and roofing stone sites are predominantly located in the AONBs within Gloucestershire, which are rural locations, and in most cases are not located on the primary road network, thereby increasing the mileage of associated traffic movements and their associated emissions. However, the levels of traffic associated with building and roofing stone sites is less than other mineral workings due to the lower annual tonnages worked, thereby reducing the level of emissions. In addition, the exact

SA Objective and Sub Questions	SA Score	Justification
		location of proposals and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	?	While this policy may affect the water quality and quantity in Gloucestershire, at this stage in the planning process it is not possible to determine the impacts of policies such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the building and roofing stone proposal (location, design, method of working etc.), which would be assessed at the planning application stage.
17. 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	+/-?	This policy is likely to have mixed minor positive, minor negative effects on this SA objective. This is because building and roofing stone sites are predominantly located in the AONBs within Gloucestershire, which are rural locations, and in most cases are not located on the primary road network, thereby increasing the mileage of associated lorry traffic movements. However, the levels of lorry traffic associated with building and roofing stone sites is less than other mineral workings due to the lower annual tonnages worked. In addition, the exact location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage, therefore these effects are uncertain.
18. To reduce contributions to and to adapt to Climate Change.	+/-?	Policy MW02 will likely to have a negative effect upon efforts to tackle climate change by virtue of facilitating building stone working. This activity is energy intensive and uses fossils fuels. Nevertheless, the policy specifically advocates a localism approach in the sourcing of material for the built environment (both for new-built and building restoration / maintenance purposes), which may otherwise be obtained from mineral working further afield that will more likely generate a larger carbon footprint. Consequently, overall a mixed minor positive and negative effect is anticipated. Some degree of uncertainty also exists as full details of future development proposals will not be known until the planning application stage.

Policy MW03 Clay for Civil Engineering Purposes

SA Objective and Sub Questions	SA Score	Justification
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?	Clay sites, due to their methods of extraction, and low outputs are typically less intensive than other minerals worked in Gloucestershire. Therefore, generally the effects on the health and wellbeing of people living and working in Gloucestershire are likely to be negligible. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0?	Clay sites, due to their methods of extraction, and low outputs are typically less intensive than other minerals worked in Gloucestershire. Therefore, generally, the effects on the amenity of local communities in Gloucestershire are likely to be negligible. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	Policy MW03 may have a positive effect on employment by virtue of facilitating clay working which is a local employer. There is also the potential for indirect employment opportunities through the transportation of materials and / their subsequent application in different end-use products (i.e. civil engineering projects). The positive impact is likely to be reflected across all social and ethnic groups. However, the policy is only likely to have a minor positive effect on the SA objective on the grounds that the scale of impact is unlikely to significant at the county-level. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+?	Policy MW03 may have a positive effect on employment by virtue of facilitating clay working which is a local employer. There is also the potential for indirect employment opportunities through the transportation of materials and / their subsequent application in different end-use products (i.e. civil engineering projects). The positive impacts likely to be felt in both rural and urban areas. However, the policy is only likely to have a minor positive effect on the SA objective on the grounds that the scale of impact is unlikely to significant at the county-level. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
5. To ensure that mineral sites do not compromise the safety of commercial	?	It is difficult to determine whether policy MW03 is likely to affect this SA objective, as

SA Objective and Sub Questions	SA Score	Justification
or military aerodromes.		the county's clay resources are widespread and occur within and outside of the influence of local aerodromes[50]. Uncertainty exists as full details of future development proposals will not be known until the planning application stage.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	This policy is unlikely to affect this SA Objective, as the extraction of clay for engineering purposes under this policy will not be classed as inappropriate development, as they are contributing to the extraction of mineral resources, not limiting the ability to extract resources.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MW03 could potentially lead to negative effects for biodiversity, as proposals for the extraction of clay for engineering purposes could have potential impacts on designated sites, protected species or habitats. However, the policy could also lead to positive effects, as sites may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. Although, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MW03 could potentially lead to negative effects for landscape and landscape character. However, the policy could also lead to positive effects, as it may lead to the sympathetic restoration of sites which could have positive effects on landscape character, especially as the policy requires applications to meet specific restoration requirements, such as phased restoration of sites within an acceptable timeframe. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. Although, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	Policy MW03 advocates clay working for civil engineering purposes but only where it will contribute towards maintaining steady and adequate supplies to meet demonstrable demand or no suitable, viable and more sustainable sources can be obtained. The policy offers no specific provisions relating to achievement of certain standards of mineral restoration or support for the conservation and / or enhancement of certain post-extraction activity or land-uses.

[50] See paragraphs 51, 52 and 379 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0?	This policy is unlikely to affect this SA Objective, as small-scale clay sites are unlikely to meaningfully protect, conserve or enhance Gloucestershire's material, cultural or recreational assets. However, the policy could permit sites which could have potential effects on the access to and the enjoyment of recreational facilities (e.g. Public Rights of Way), however these would be uncertain as they would not be known until the planning application stage, and where there is the potential for effects upon recreation they will be temporary. Therefore, this policy is likely to have negligible, uncertain effects on this SA objective.
11. To protect conserve and enhance geo-diversity in Gloucestershire.	+/-?	Policy MW03 may lead to minor negative effects as the extraction of clay may uncover and harm geological interests. However, these sites can also potentially contribute to geodiversity by preserving and conserving geological features, which is more likely to occur at less intensive mineral sites such as clay. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the clay sites, which would not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive and minor negative effects on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0?	The policy is unlikely to affect this SA Objective, as clay sites are less intensive than other minerals worked in Gloucestershire. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the clay sites, which would not be known until the planning application stage.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	+?	The policy is not expected to have an effect on flood risk areas, as minerals working and processing (except sand & gravel working) are classed as less vulnerable, which means they are potentially compatible with all flood zones except for Flood Zone 3b, which sites for clay for engineering purposes are unlikely to be located in. However, the supporting text to the policy notes that there are a number of emerging local infrastructure-related projects that could generate very acute local demand for engineering clay (including flood defence works)[51], therefore, the policy may contribute to reducing flooding in some areas and could have a minor positive effect on this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the clay sites, which would not be known until the planning application stage.

[51] See paragraph 167 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
14. To protect and enhance soil / land quality in Gloucestershire.	-?	This policy is likely to permit small to medium scale (i.e. less than 20ha) clay sites. However, the exact land take and location according to agricultural land quality (i.e. Grades 1 – 5), and whether improvements to soil quality through site restoration are possible; will not be known until the planning application stage, therefore effects on this SA Objective are likely to be minor negative uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0?	This policy is likely to have negligible effects on this SA objective as clay sites have low outputs thereby generating minimal traffic, which in turn will have a negligible impact on air quality. However, the exact location of proposals and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	?	While Policy MW03 may affect the water quality and quantity in Gloucestershire, at this stage in the planning process it is not possible to determine the impacts of policies such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the engineering clay proposal (location, design, method of working etc.), which would be assessed at the planning application stage.
17. 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	+?	This policy is likely to have minor positive effects on this SA objective, as the levels of lorry traffic associated with clay sites are less than other mineral workings due to the lower outputs. In addition, the clay sites tend to be located relatively nearby to their intended use. However, the exact location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage, therefore these effects are uncertain.
18. To reduce contributions to and to adapt to Climate Change.	+/-?	Policy MW03 is likely to have a minor negative effect upon efforts to tackle climate change by virtue of facilitating clay working. This activity is energy intensive and uses fossils fuels. Nevertheless, the policy does seek to curb uncontrolled working and requires it to be a justified activity. Furthermore, it advocates sustainable sourcing of clay as a preference, which should avoid the occurrence of clay travelling excessive distances, which is more likely generate a larger carbon footprint. Overall a mixed minor positive and negative effect is anticipated. Although some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.

Policy MW04 Brick clay

SA Objective and Sub Questions	SA Score	Justification
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/-?	Policy MW04 advocates the future working of brick clay with limited controls that cover the ability to maintain sufficient available provision of at least 25 years. Clay sites and the associated works where clay is used to make brick, may be visually intrusive and the operation of the plant and the distribution of the finished products can cause noise and traffic. However, clay sites, due to their methods of extraction, and low outputs are typically less intensive than other minerals worked in Gloucestershire. Therefore, overall the effects on the health and wellbeing of people living and working in Gloucestershire are likely to be minor, however, in some cases there will be negligible or no effects due to the small scale and low intensity associated with brick clay workings. The effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0/-?	As noted above, brick clay sites are typically less intensive than other minerals sites, therefore the effects on the amenity of people living and working in Gloucestershire are likely to be minor, despite Policy MW04 advocating the future working of brick clay with limited controls that cover the ability to maintain sufficient available provision of at least 25 years.. However, in some cases there will be negligible or no effects due to the small scale and low intensity associated with brick clay workings. The effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage. However, the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	Policy MW04 may have a positive effect on sustainable economic development, including for all social and ethnic backgrounds by virtue of facilitating brick clay working, which is a local employer. There is also the potential for indirect employment opportunities through the transportation of materials and / their subsequent application in different end-use products. This may be particularly valuable to the construction industry. However, the policy is only likely to have a minor positive effect on the SA objective on the grounds that the scale of impact is unlikely to significant at the county-level. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+?	Policy MW04 may have a positive effect on employment opportunities by virtue of facilitating brick clay working, which is a local rural employer. There is also the potential for indirect employment opportunities both rurally and in urban settings through

SA Objective and Sub Questions	SA Score	Justification
		processing activities (e.g. brick making), transportation and their subsequent application in different end-use products. This may be particularly valuable to the construction industry. However, the policy is only likely to have a minor positive effect on the SA objective on the grounds that the scale of impact is unlikely to significant at the county-level. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	Policy MW04 is unlikely to affect this SA objective, as the county's potentially workable brick clay resources are not located where they might influence aerodrome safety[52].
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	Policy MW04 is unlikely to affect this SA Objective, as the working of brick clay resources is not likely to be classed as an inappropriate development. There is no evidence that it will hamper accessibility and / or sterilise other valuable mineral resources.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MW04 could potentially lead to negative effects for biodiversity, as proposals for the extraction of brick clay could have potential impacts on designated sites, protected species or habitats. However, the policy could also could lead to positive effects, as brick clay sites may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the brick clay sites, which would not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MW04 could potentially lead to negative effects for landscape and landscape character, as associated works where clay is used to make brick, may be visually intrusive. However, the policy could also lead to positive effects, as it may lead to the sympathetic restoration of sites which could have positive effects on landscape character. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the brick clay sites, which would not be known until the planning application stage.

[52] See paragraphs 51 and 379 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	Policy MW04 advocates the future working of brick clay with limited controls that cover the ability to maintain sufficient available provision of at least 25 years. It has no specific provisions relating to achievement of certain standards of mineral restoration or support for the conservation and / or enhancement of certain post-extraction activity or land-uses.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	Policy MW04 is unlikely to meaningfully protect, conserve or enhance Gloucestershire's material, cultural or recreational assets. However, the policy could permit sites which could have potential minor negative effects on the access to and the enjoyment of recreational facilities (e.g. Public Rights of Way), however these would be uncertain as they would not be known until the planning application stage, and where there is the potential for effects upon recreation they will be temporary. In addition, post-working restoration, could offer opportunities to enhance such assets. Therefore, this policy is likely to have mixed minor negative and positive effects on this SA objective. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
11. To protect conserve and enhance geo-diversity in Gloucestershire.	+/-?	This policy may lead to minor negative effects as the extraction of clay may uncover and harm geological interests. However, these sites can also potentially contribute to geodiversity by preserving and conserving geological features, which is more likely to occur at less intensive mineral sites such as clay. The effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the brick clay sites, which would not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive and minor negative effects on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	Policy MW04 advocates the future working of brick clay with limited controls that only really cover the ability to maintain sufficient available provision of at least 25 years. When this is considered alongside the overall plan period – 15 years, it is difficult to claim that the policy offers much restriction on the future working of brick clay and thus much avoidance of risk from adverse impacts on the historic environment or heritage assets. However, allowing for brick clay working will support a supply of materials needed in the maintenance and enhancement of historic built assets. In addition, working could also expose (and make accessible) features of archaeological interest for analysis and / or for their removal and protection. Overall a mixed positive (of potential high significance) and minor negative effect is anticipated. Some degree of uncertainty

SA Objective and Sub Questions	SA Score	Justification
		also exists as full details of future development proposals will not emerge until the planning application stage. Local brick clay is used to protect historic building assets and contributes to the historic environment of Gloucestershire by reinforcing local character and distinctiveness when utilised in new developments. In addition, working could also expose (and make accessible) features of archaeological interest for analysis and / or for their removal and protection. However, the associated works where clay is used to make brick may be visually intrusive and the operation of the plant and the distribution of the finished products can cause noise and traffic, and therefore the policy could have a minor negative effect as well on heritage assets and their setting. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the brick clay sites, which would not be known until the planning application stage. In addition, clay sites are less intensive than other minerals worked in Gloucestershire and on a county scale the industry is very small when compared to other minerals currently worked, hence the minor effects identified.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0?	Policy MW04 is not expected to have an effect on flood risk areas, as minerals working and processing (except sand & gravel working) are classed as less vulnerable, which means they are potentially compatible with all flood zones except for Flood Zone 3b, which brick clay sites are unlikely to be located in. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the clay sites, which would not be known until the planning application stage.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	This policy is likely to permit small to medium scale (i.e. less than 20ha) clay sites. However, the exact land take and location according to agricultural land quality (i.e. Grades 1 – 5), and whether improvements to soil quality through site restoration are possible; will not be known until the planning application stage, therefore effects on this SA Objective are likely to be minor negative uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	+/-?	Policy MW04 is likely to have mixed minor positive, minor negative effects on this SA objective. This is because brick clay sites are predominantly located in the rural areas of Gloucestershire, thereby increasing the mileage of traffic movements and their associated emissions. However, the levels of traffic associated with brick clay sites is less than other mineral workings due to the lower annual tonnages worked, thereby reducing the level of emissions. In addition, the exact location of proposals and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.

SA Objective and Sub Questions	SA Score	Justification
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	?	While this policy may affect the water quality and quantity in Gloucestershire, at this stage in the planning process it is not possible to determine the impacts of policies such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the brick clay proposal (location, design, method of working etc.), which would be assessed at the planning application stage.
17. 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	+/-?	Policy MW04 is likely to have mixed minor positive, minor negative effects on this SA objective. This is because brick clay sites are predominantly located in the rural areas of Gloucestershire, thereby increasing the mileage of traffic movements on local roads. However, the levels of traffic associated with brick clay sites is less than other mineral workings due to the lower annual tonnages worked, therefore there will be reduced lorry movements compared to other mineral operations in the County. In addition, the exact location of proposals and levels of traffic will not be known until the planning application stage, therefore these effects are uncertain.
18. To reduce contributions to and to adapt to Climate Change.	+/-	Policy MW04 is likely to have a negative effect upon efforts to tackle climate change by virtue of facilitating brick clay working. This activity is energy intensive and uses fossils fuels. Nevertheless, the policy endorses the concept of local supplies, which reduces the prospect of brick clay having to be imported from further afield. This would therefore generate a larger carbon footprint. Consequently, overall a mixed minor positive and negative effect is anticipated. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.

Policy MW05 Coal

SA Objective and Sub Questions	SA Score	Justification
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.	+/-?	Policy MW05 offers a presumption against future working of coal unless they are considered to be environmentally acceptable or they provide national, local or community benefits that clearly outweigh impacts likely to arise as a result of their working. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to protecting health and wellbeing of local communities, particularly for those nearby to potentially extractable resources. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably are taken into account means that there may still be some potential effects on health and wellbeing. Overall the effects on the health and wellbeing of people living and working in Gloucestershire are likely to be minor. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+/-?	Policy MW05 offers a presumption against future working of coal unless they are considered to be environmentally acceptable or they provide national, local or community benefits that clearly outweigh impacts likely to arise as a result of their working. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to safeguarding the amenity of local communities, particularly for those nearby to potentially extractable resources. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably are taken into account means that there may still be some potential effects on amenity. Overall the effects on amenity of people living and working in Gloucestershire are likely to be minor. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP. From an economic / employment perspective this could have a minor negative effect. However, the potential within the policy to allow for

SA Objective and Sub Questions	SA Score	Justification
		some coal working, under demonstrable circumstances that might include an economic / local employment justification, could have a minor positive effect[53]. Accordingly, a mixed positive and negative effect is anticipated. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP. From an economic / employment perspective this could have a minor negative effect. However, the potential within the policy to allow for some coal working, under demonstrable circumstances that might include an economic / employment justification, may result in a minor positive effect[54]. Accordingly, a mixed positive and negative effect is anticipated. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	Policy MW05 is unlikely to affect this SA objective, as the county's workable coal resource area (Forest of Dean) is not located where it is likely to have an influence upon aerodrome safety[55].
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	Policy MW05 is unlikely to affect this SA Objective, as the working of coal resources is not likely to be classed as an inappropriate development. There is no evidence that it will hamper accessibility and / or sterilise other valuable mineral resources.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to protecting biodiversity. However, the potential for some coal working to be

[53] See paragraph 189 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)
[54] See paragraph 189 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)
[55] See paragraphs 53-55 and 379 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
		allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to biodiversity) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to protecting landscape quality. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to landscape quality) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP. The policy offers no specific provisions relating to achievement of certain standards of mineral restoration or support for the conservation and / or enhancement of certain post-extraction activity or land-uses.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to protecting material, cultural and recreational assets. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to material, cultural and recreational assets) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
11. To protect conserve and enhance geo-diversity in Gloucestershire.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to protecting geo-diversity. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental

SA Objective and Sub Questions	SA Score	Justification
		acceptably (including matters linked to geo-diversity) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to protecting the historic environment and heritage assets. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to the historic environment and heritage assets) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to preventing flooding. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to flood risk) are taken into account, may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
14. To protect and enhance soil / land quality in Gloucestershire.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to preserving soil/land quality. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to soil / land quality) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.

SA Objective and Sub Questions	SA Score	Justification
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to preserving air quality. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to air quality) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to preserving the water environment - both quality and quantity. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (including matters linked to the water environment) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
17. 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	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with respect to avoiding new and/or worsening lorry traffic. However, the potential for some coal working to be allowed to take place, particularly where 'other' matters beyond environmental acceptably (which could include highways related matters) are taken into account may result in a minor negative effect. Nevertheless, some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.
18. To reduce contributions to and to adapt to Climate Change.	+/-?	Policy MW05 offers a presumption against future working of coal unless environmental acceptability can be shown or benefits beyond environmental acceptability can be demonstrated. This represents the strongest approach to controlling proposed new development within the Draft MLP and could therefore have a minor positive effect with

SA Objective and Sub Questions	SA Score	Justification
		respect to the objective aim of reducing contributions on climate change. However, the potential for some coal working to be allowed to take place under certain circumstances may have a minor negative effect. The activity is energy intensive and is a source of fossil fuels a key contributor to greenhouse gas emissions. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.

Policy MW06 Oil & Gas

SA Objective and Sub Questions	SA Score	Justification
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.	-?	Four conditional Petroleum Exploration and Development Licences (PEDL) have been issued in the county in 2015[56] with prospects of more activity within the plan period. If proposals came forward under Policy MW06 many of the potential impacts on communities and health and wellbeing (e.g. dust, pollution) are not that dissimilar to most mineral operations. However, while operations are likely to be intensive, they are likely to be short term, especially during exploration. Policy MW06 will only permit proposals that as far as practicable are to minimise impacts on local communities. Therefore, this policy could have minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites including mitigation measures, which would not be known until they were to come forward at the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	If proposals come forward under Policy MW06, many of the potential impacts on the amenity of local communities (e.g. transport, noise, lighting, dust, and pollution) are not that dissimilar to most mineral operations. However, while operations are likely to be intensive, they are likely to be short term, especially during exploration. Policy MW06 will only permit proposals that as far as practicable are to minimise impacts on local communities, will mitigate amenity impacts to ensure that there is no unacceptable adverse impact on the environment and local communities. Therefore, this policy could have minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites including mitigation measures, which would not be known until they were to come forward at the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	Oil and gas is anticipated to continue to play an important role in the development of the UK economy and as consequence policy MW06 may contribute to this by making provision for a source of domestic oil and gas supply. The Government also regards oil and gas production as contributing to energy security. Secure and consistent energy, at least over the short to medium term will provide certainty that facilitates economic growth, which in turn fuels job creation. However, it is recognised that oil and gas are finite non-renewable resources. The policy also includes safeguards that seek minimise the potential for adverse impacts to occur. Overall a minor positive and effect is anticipated. Nevertheless, some degree of uncertainty exists as full details of future development proposals will not emerge until the planning application stage.
4. To provide employment opportunities in both rural and urban	+?	Oil and gas is anticipated to continue to play an important role in the development of the UK economy and as consequence policy MW06 may contribute to this by making

[56] See paragraph 195 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
areas of the County, promoting diversification in the economy.		provision for a source of domestic oil and gas supply. It may also present employment opportunities locally both directly (in the county's rural areas that contain PEDL licenses)[57] and indirectly through support business activities (e.g. haulage, maintenance etc.), which could be rural or urban based. Overall a positive effect is anticipated. Nevertheless, some degree of uncertainty exists as full details of future development proposals will not emerge until the planning application stage.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	Policy MW06 is unlikely to affect this SA objective, as the county's licensed oil and gas resource areas are not located where they are likely to have an influence upon aerodrome safety (i.e. the Forest of Dean and Stroud)[58].
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	Policy MW06 is unlikely to affect this SA Objective, as the working of oil and gas resources is not likely to be classed as an inappropriate development. There is no evidence that it will hamper accessibility and / or sterilise other valuable mineral resources.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MW06 could lead to minor negative effects for biodiversity, as even though proposals are like to be short term for some stages of development (e.g. exploration), they are likely to be intensive and lead to potential impacts not too dissimilar to most mineral operations (e.g. transport, noise, lighting, dust, and pollution) which could negatively affect biodiversity. However, the policy will only permit proposals where they do not adversely affect the environment and are to have no unacceptable adverse impacts in terms of quantity and quality upon sensitive water receptors including natural habitats. The sites could therefore lead to positive effects, as sites may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until they were to come forward at the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	This policy could potentially lead to minor negative effects for landscape and landscape character, as the policy, subject to criteria, could permit proposals for an industry which until recently has not been present in Gloucestershire, thereby having a greater effect on

[57] See paragraph 195 of the Draft Minerals Local Plan for Gloucestershire (2018-2032), which sets out the blocks of land within Gloucestershire that have granted Petroleum Exploration and Development Licences (PEDLs).
[58] See paragraphs 195 and 379 of the Draft Minerals Local Plan for Gloucestershire (2018-2032)

SA Objective and Sub Questions	SA Score	Justification
		the landscape. However, the sites are relatively contained and small scale, and after exploration and appraisal the presence of production wells are the only indication of a well's presence. The policy could also lead to positive effects, as it may lead to the sympathetic restoration of sites which could have positive effects on landscape character, especially as the policy requires proposals to be restored at the earliest practicable opportunity and restoration is to be a high standard that reflects the character of the landscape. Also, the policy will only permit proposals where they do not adversely affect the environment. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until they were to come forward at the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	In most cases proposals for the extraction of minerals, including unconventional and conventional oil and gas sites, will have the potential to be restored to a high standard, achieving maximum after use benefits and enhancing the landscape. Policy MW06 will also only permit proposals where they do not adversely affect the environment and accord with all other relevant planning policies, and include detailed plans and proposals for the restoration of sites. Therefore the policy encourages the restoration of sites and is likely to have minor positive effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until they were to come forward at the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	This policy could permit sites which could have potential effects on the access to and the enjoyment of recreational facilities (e.g. Public Rights of Way), however these would be uncertain as they would not be known until the planning application stage, and where there is the potential for effects upon recreation they will be temporary. Also, Policy MW06 requires land to be restored at the earliest opportunity, to a high standard that will benefit after-users. Therefore, this policy is likely to have mixed minor positive and minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until they were to come forward at the planning application stage.
11. To protect conserve and enhance geo-diversity in Gloucestershire.	+/-?	The use of this policy may lead to minor negative effects as operations may uncover and harm geological interests. However, the policy will only permit proposals where they do not adversely affect the environment and accord with all other relevant planning policies. Furthermore, the undertaking of oil and gas development, particularly the earlier exploratory phases, may yield new/additional geological evidence of academic value. In addition, through restoration, geo-diversity assets may be secured and made more easily accessible. Therefore, a mixed minor positive and negative effect is anticipated. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until they were to come forward at the planning application stage.

SA Objective and Sub Questions	SA Score	Justification
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	Policy MW06 could heighten the risk of adverse impacts on the historic environment and heritage assets by virtue of facilitating new oil & gas developments. However, the policy also supports a proportionate and balanced approach that will prevent such activities from occurring in an unregulated and unfettered manner. As a consequence, a mixed minor positive and negative effect is anticipated. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage. Policy MW06 may lead to minor negative effects on the historic environment (e.g. archaeology), heritage assets and their setting as operations can be intensive, due to the methods of working (i.e. drilling, water usage at high pressure, traffic volumes). The policy could also lead to positive effects, as it may lead to the sympathetic restoration of sites; Policy MW06 requires land to be restored at the earliest opportunity, to a high standard that will benefit after-users. Therefore, this policy is likely to have mixed minor positive and minor negative, uncertain effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until they were to come forward at the planning application stage.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0?	The policy is not expected to have an effect on flood risk areas, as minerals working and processing (except sand & gravel working) are classed as less vulnerable, which means they are potentially compatible with all flood zones except for Flood Zone 3b, which oil and gas sites are unlikely to be located in. Also, the policy will only permit proposals that minimise impacts on the environment. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which would not be known until they were to come forward at the planning application stage.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	This policy is likely to permit small to medium scale (i.e. less than 20ha) sites if they come forward. However, the exact land take and location according to agricultural land quality (i.e. Grades 1 – 5), and whether improvements to soil quality through site restoration are possible; will not be known until the planning application stage. Also, the policy will only permit proposals that minimise impacts on the environment. Therefore effects on this SA Objective are likely to be minor negative uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-?	Policy MW06 may have a negative effect upon air quality by virtue of facilitating new oil and gas developments, which will undoubtedly involve some vehicular and other operational activities (e.g. transportation, flaring off of gas etc.) that pose a risk of generating emissions of air pollutants, particularly at/or near to proposed working sites. Therefore, a minor negative effect could occur. However, the policy includes safeguards

SA Objective and Sub Questions	SA Score	Justification
		that cover air pollution impacts Therefore, some degree of uncertainty also exists as full details of future development proposals will not be known until the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	?	While Policy MW06 may affect the water quality and quantity in Gloucestershire, at this stage in the planning process it is not possible to determine the impacts of policies such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (location, design, method of working etc.), which would be assessed when proposals came forward at the planning application stage. The policy however does recognise that development sites are to be located outside of Protected Groundwater Source Areas and Protected Areas. In addition, Policy MW06 specifies that there are to be no unacceptable adverse impacts in terms of quantity and quality upon sensitive water receptors including groundwater, water bodies and natural habitats.
17. 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	-?	Policy MW06 is likely to have minor negative effects on this SA objective. As the levels of lorry traffic associated with sites can be substantial due to the transport of water used in operations and the transportation of extracted oil and gas. However, the policy will only permit proposals that minimise impacts on the environment. Also, the exact location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage, therefore these effects are uncertain.
18. To reduce contributions to and to adapt to Climate Change.	+/-?	Policy MW06 is likely to have a negative effect upon efforts to tackle climate change by virtue of facilitating oil and gas development. This activity is energy intensive, generates fugitive emissions and ultimately is a source of fossil fuels a key contributor to greenhouse gas emissions. However, the policy seeks to prevent uncontrolled development, which offers at least some curbs on these expected negative effects. Furthermore, facilitating domestic supplies of oil and gas (at least in the short-to-medium term) could represent a minor positive effect when compared to the climate change-related impacts from importing alternative sources. This is a matter that has

SA Objective and Sub Questions	SA Score	Justification
		been specifically discussed and reported upon by the national independent advisory body to Government – the Committee on Climate Change (CCC)[59]. Some degree of uncertainty also exists as full details of future development proposals will not emerge until the planning application stage.

[59] See the Committee on Climate Change (CCC) Report - *'The compatibility of UK onshore petroleum with meeting the UK's carbon budgets'* (July 2016) | https://www.theccc.org.uk/publication/onshore-petroleum-the-compatibility-of-uk-onshore-petroleum-with-meeting-carbon-budgets/

Policy MW07 Ancillary Development

SA Objective and Sub Questions	SA Score	Justification
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 provision of ancillary development through this policy is likely to have a minor negative effect as these sorts of activities could lead to minor negative effects on the health and wellbeing of people living and working in Gloucestershire. However, the effects are uncertain as they will depend on the type, scale and location of the ancillary development, which will not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	The provision of ancillary development through this policy is likely to have a minor negative effect as these sorts of activities could lead to minor negative effects on the amenity of local communities in Gloucestershire. However, the effects are uncertain as they will depend on the type, scale and location of the ancillary development, which will not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+	Policy MW07 permits ancillary development within minerals sites if it will contribute positively to sustaining or growing the local economy. As such, a minor positive effect is likely for this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	Policy MW07 permits ancillary development within minerals sites if it will contribute positively to sustaining or growing the local economy. As such, a minor positive effect is likely for this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The restrictions on ancillary development included within this policy are unlikely to affect the safety of aerodromes and no effect is therefore expected on SA objective 5.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	The restrictions on ancillary development included within this policy are unlikely to affect the safeguarding of mineral resources from sterilisation, as ancillary development is not considered inappropriate development. No effect is therefore expected on SA objective 6.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	The provision of ancillary development via Policy MW07 is likely to have adverse impacts on biodiversity, including natural habitats and protected species. However, these are likely to be minor as the policy requires proposals to demonstrate that the proposed operations are linked to the existing mineral operations on site, therefore not a new site. Policy MW07 also requires ancillary development to be able to achieve previously approved or acceptable in principle plans for future site restoration which could result in biodiversity net gains. Overall therefore, mixed minor positive and minor negative effects are likely. These effects are uncertain as they will depend on the type, scale and

SA Objective and Sub Questions	SA Score	Justification
		location of the ancillary development, which will not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	The provision of ancillary development via Policy MW07 is likely to have adverse impacts on Gloucestershire's landscape as fixed building structures are often required. However, these are likely to be minor as the policy requires proposals to demonstrate that the proposed operations are linked to the existing mineral operations on site, therefore not a new site. Policy MW07 also requires all operations to be of a temporary nature and able to achieve previously approved or acceptable in principle plans for future site restoration. Overall therefore, mixed minor positive and minor negative effects are likely. These effects are uncertain as they will depend on the type, scale and location of the ancillary development, which will not be known until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+	This policy requires the life of ancillary developments within existing mineral sites to be limited to that of the mineral working and the removal of all built structures as soon as is practicably possible once mineral working has ceased. In addition, proposals are to be able to achieve previously approved or acceptable in principle plans for future site restoration. As such, the policy is likely to have a positive effect on the restoration of mineral sites by requiring that ancillary developments are included within restoration works.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The restrictions on ancillary development included within this policy are unlikely to affect cultural or recreational assets and no effect is therefore expected on SA objective 10.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The restrictions on ancillary development included within this policy are unlikely to affect geodiversity and no effect is therefore expected on SA objective 11.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0	The restrictions on ancillary development included within this policy are unlikely to affect the historic environment and no effect is therefore expected on SA objective 12.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The restrictions on ancillary development included within this policy are unlikely to affect the likelihood of flooding and no effect is therefore expected on SA objective 13.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The restrictions on ancillary development included within this policy are unlikely to affect soil quality and no effect is therefore expected on SA objective 14.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The restrictions on ancillary development included within this policy are unlikely to affect air quality and no effect is therefore expected on SA objective 15.
16. To protect and enhance water	0	The restrictions on ancillary development included within this policy are unlikely to affect

SA Objective and Sub Questions	SA Score	Justification
quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.		water quality and no effect is therefore expected on SA objective 16.
17. 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	+?	Policy MW07 requires ancillary developments to contribute to achieving the best use of minerals sourced within the boundary of the site in which they are to be located. In addition, this policy requires any importation of minerals to be sourced from the most sustainable location. As both these requirements could reduce the transportation of minerals, a minor positive effect is likely. These effects however are uncertain as they will depend on the type, scale and location of the ancillary development, which will not be known until the planning application stage.
18. To reduce contributions to and to adapt to Climate Change.	+?	Policy MW07 requires ancillary developments to contribute to achieving the best use of minerals sourced within the boundary of the site in which they are to be located. In addition, this policy requires any importation of minerals to be sourced from the most sustainable location. As both these requirements could reduce the transportation of minerals and therefore reduce climate change contribution, a minor positive effect is likely. These effects however are uncertain as they will depend on the type, scale and location of the ancillary development, which will not be known until the planning application stage.

Policy MA01 Aggregate working within site allocations

SA Objective and Sub Questions	SA Score	Justification
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 may have a minor negative impact on communities and the health and wellbeing of people living and working in Gloucestershire. The policy supports aggregate operations within the Specific Site, Preferred Areas and Areas of Search listed in the 10 Allocations. Therefore, this may continue to subject communities and people's health and wellbeing to impacts such as dust from blasting/ drilling and other sources (e.g. haul roads, machinery and stockpiles). However, the policy will only permit operations where need to maintain the landbank is demonstrated and where the detailed development requirements in Appendix 6 of the plan are satisfied. Also, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals that come forward within the Allocations, which will not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	Policy MA01 may have a minor negative impact on the local amenity of communities, as the policy supports aggregate operations within the Specific Site, Preferred Areas and Areas of Search listed in the 10 Allocations. Therefore, this may continue to subject local communities to impacts such as dust from blasting/ drilling and other sources (e.g. haul roads, machinery and stockpiles), vibration, noise and traffic congestion. However, the policy will only permit operations where need to maintain the landbank is demonstrated and where the detailed development requirements in Appendix 6 of the plan are satisfied. Also, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals that come forward within the Allocations, which will not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+	Aggregates are important local and national resources and are essential to support sustainable economic growth. They support a wide range of end uses and industries and it is therefore important that there is a sufficient supply of material to supply construction and to provide the infrastructure, buildings, energy and goods that Gloucestershire and the country need. Policy MA01 is likely to have a minor positive effect on this SA objective, as it supports aggregate operations within Preferred Areas, which will therefore support economic prosperity and make a positive contribution to the

SA Objective and Sub Questions	SA Score	Justification
		local and national economy.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	Aggregates are important local and national resources and support a wide range of end uses and industries. Policy MA01 supports the supply of aggregates, which will have a minor positive effect on increasing employment levels.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The policy supports aggregate operations within the Specific Site, Preferred Areas and Areas of Search listed in the 10 Allocations. This includes Allocations for sand and gravel extracted in the Cotswolds Water Park which is located within and in close proximity to the safeguarding zones for RAF Fairford and RAF Brize Norton. Therefore, this policy could have minor negative effects on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as proposals to meet Gloucestershire's needs may be restored to a form of open water use as they may be located close to the Cotswold Water Park. However, the policy will only permit proposals where it is demonstrated that the proposals are required to maintain the landbank requirements. The effects would also be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site within the Allocations. Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals that come forward within the Allocations, which will not be known until the planning application stage. Therefore, the policy could have minor negative, uncertain effects on this 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.	0	This policy is unlikely to affect this SA Objective, as aggregate sites permitted under this policy will not be classed as inappropriate development, as they are contributing to the extraction of mineral resources, not limiting the ability to extract resources.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MA01 could potentially lead to negative effects for biodiversity, as proposals within the Allocations could have potential impacts on designated sites, protected species or habitats (see separate appraisal matrices for the Allocations). However, the policy requires proposals to meet the detailed development requirements in Appendix 6 of the plan, which require exploration of the potential to achieve net gains for biodiversity during restoration via biodiversity enhancement opportunities that may exist. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that may come forward within the Specific Site, Preferred Areas or Areas of Search, which will not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	Policy MA01 could potentially lead to negative effects for landscape and landscape character, especially as some of the Allocations (for crushed rock) are located within the Cotswolds and Wye Valley AONBsHowever, the policy could also lead to positive effects, as it requires proposals within the Allocations to meet the detailed development

SA Objective and Sub Questions	SA Score	Justification
		requirements in Appendix 6 of the plan, which may lead to the sympathetic restoration of sites which could have positive effects on landscape character. Also, the policy will only permit proposals where exiting permitted reserves are inadequate or limited. Therefore, this proposed policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that may come forward within the Specific Site, Preferred Areas or Areas of Search, which will not be known until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	In most cases proposals for the extraction of minerals within the Allocations, including aggregates, will have the potential to be restored to a high standard, achieving maximum after use benefits and enhancing the landscape. Exploration of restoration potential is required for all of the Allocations in the detailed development requirements in Appendix 6 of the plan. Therefore, the policy is likely to have minor positive effects on this SA objective, especially as the policy will only permit proposals where landbanks are inadequate or limited. Although, any effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites within Preferred Areas. While sites within these areas have been assessed as part of this Sustainability Appraisal, it is still not known what sites may come forward and what the exact proposals will include, this will not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	Policy MA01 could potentially lead to negative effects on material, cultural or recreational assets as mineral extraction sites could have potential effects on the access to and the enjoyment of recreational facilities (e.g. Public Rights of Way), however these would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that may come forward within the Specific Site, Preferred Areas or Areas of Search, which will not be known until the planning application stage. Where there is the potential for effects upon recreation they will be temporary, and the detailed development requirements in Appendix 6 of the plan require an assessment of the PRoW network to be undertaken and advice should be sought from the Local Highways Authority regarding any proposals to temporarily divert or permanent re-route the potentially affected path. Therefore, there may be opportunities for enhancement of PRoWs in the longer term, and this policy is likely to have mixed minor positive and negative but uncertain effects on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	+/-?	Policy MA01 may lead to minor negative effects as the continued extraction and/or processing of primary aggregate may uncover and harm geological interests. However, these sites can also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that may come forward within the Specific Site, Preferred Areas or Areas of Search, which will not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive

SA Objective and Sub Questions	SA Score	Justification
		and minor negative effects on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	Policy MA01 is likely to have minor negative effects on this SA objective, as some aggregate sites (particularly crushed rock) within the Specific Site, Preferred Areas or Areas of Search will be intensive and could therefore negatively affect the historic environment (e.g. archaeology), heritage assets and their setting as a result of blasting. However, some sites may not be as an intensive and be able to preserve findings and therefore benefit our understanding of the local archaeology or contribute towards the local vernacular. Also, any effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites within Allocations, which will not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive/minor negative effects on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	This policy is expected to have an uncertain, minor negative effect on flood risk areas, as the Atkins hydrogeological reports have identified potentially significant effects on flood risk for all of the ten Allocations, due mainly to backfilling during restoration using low permeability material. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward within the Allocations, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	Sites which come forward and are supported by this policy are likely to range from small to medium scale (i.e. less than 20ha) to large (i.e. over 20ha). However, the exact land take and location according to agricultural land quality (i.e. Grades 1 – 5), and whether improvements to soil quality through site restoration are possible; will not be known until the planning application stage. Therefore, effects on this SA Objective are likely to be minor negative uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-?	This policy may have a minor negative impact on this SA objective, as the policy supports aggregate operations within the Specific Site, Preferred Areas or Areas of Search listed in the ten Allocations. Therefore, proposals will involve activities (e.g. lorry traffic) that may negatively affect air quality, for example, due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the proposed highway network. Any effects however would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward within the Allocations, which will not be known until the planning application stage. Therefore, the policy could have minor negative, uncertain effects on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise	-?	This policy is expected to have an uncertain, minor negative effect on water quality and quantity, as the Atkins hydrogeological reports have identified potentially low, moderate and significant effects on water quality and quantity for all of the ten Allocations, due

SA Objective and Sub Questions	SA Score	Justification
sustainable sources of water supply.		mainly to dewatering and diversion of groundwater, and increases in suspended solids or discharges of polluted water. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward within the Allocations, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts.
17. 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	-?	This policy is likely to have minor negative effects on this SA objective, as the policy supports aggregate operations within the ten Allocations. Therefore, aggregate proposals will involve lorry traffic movements, which at some sites may comprise multiple movements per day. The exact location of proposals, traffic levels, lorry routing and access arrangement will not be known until the planning application stage, therefore any effects would also be uncertain as the potential for effects will depend on the exact nature and design of proposals within the Allocations.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of this policy on their ability to help reduce contributions to and to adapt to climate change as it will depend on the proposals they are used to determine and how successfully they are implemented, which would not be known until the planning application stage.

Policy MA02 Aggregate working outside of site allocations

SA Objective and Sub Questions	SA Score	Justification
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 may have a minor negative impact on communities and the health and wellbeing of people living and working in Gloucestershire. The policy supports aggregate operations outside of the Specific Site, Preferred Areas and Areas of Search listed in the 10 Allocations. Therefore, this may continue to subject communities and people's health and wellbeing to impacts such as dust from blasting/ drilling and other sources (e.g. haul roads, machinery and stockpiles). However, the policy will only permit proposals where among other things it can be demonstrated that the Allocations are not able to contribute towards maintaining minimum landbank levels; and/or the proposed operations will result in the achievement of beneficial after-uses, therefore proposals on unallocated sites are less certain to be developed. Also, any effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which will not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	The policy may have a minor negative impact on the local amenity of communities, as the policy supports aggregate operations outside of the Specific Site, Preferred Areas and Areas of Search listed in the 10 Allocations. Therefore, this may continue to subject local communities to impacts such as dust from blasting/ drilling and other sources (e.g. haul roads, machinery and stockpiles), vibration, noise and traffic congestion. However, the policy will only permit proposals where among other things: it can be demonstrated that the Allocations are not able to contribute towards maintaining minimum landbank levels; and/or the proposed operations will result in overriding the achievement of beneficial after-uses, therefore proposals on unallocated sites are less certain to be developed. Also, any effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which will not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+	Aggregates are important local and national resources and are essential to support sustainable economic growth. They support a wide range of end uses and industries and it is therefore important that there is a sufficient supply of material to supply construction and to provide the infrastructure, buildings, energy and goods that Gloucestershire and the country need. This policy therefore is likely to have a minor positive effect on this SA objective, as it supports aggregate operations outside of the ten Allocations, which will therefore support economic prosperity and make a positive contribution to the local and national economy.

SA Objective and Sub Questions	SA Score	Justification
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	Aggregates are important local and national resources and support a wide range of end uses and industries. This policy supports the supply of aggregates, which will have a minor positive effect on increasing employment levels.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	Policy MA02 supports aggregate operations outside of the Specific Site, Preferred Areas and Areas of Search listed in the 10 Allocations. This could therefore include operations for sand and gravel extracted in the Cotswolds Water Park which is located within and in close proximity to the safeguarding zones for RAF Fairford and RAF Brize Norton. Therefore, the policy could have minor negative effects on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as proposals to meet Gloucestershire's needs may be restored to a form of open water use as they may be located close to the Cotswold Water Park. The effects would also be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site outside of the 10 Allocations, which will not be known until the planning application stage.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	This policy is unlikely to affect this SA Objective, as aggregate sites permitted under this policy will not be classed as inappropriate development, as they are contributing to the extraction of mineral resources, not limiting the ability to extract resources.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+/-?	Policy MA02 could potentially lead to negative effects for biodiversity, as proposals could have potential impacts on designated sites, protected species or habitats. Sites may however have the potential to achieve net gains for biodiversity as the policy requires proposals to facilitate existing approved plans for mineral site restoration. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. Although, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which will not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+/-?	This policy could potentially lead to negative effects for landscape and landscape character, especially as sites (e.g. crushed rock) may be proposed within designated landscapes (e.g. the Cotswolds or Wye Valley AONBs). However, the policy could also lead to positive effects, as it may lead to the sympathetic restoration of sites which could have positive effects on landscape character, as the policy requires proposals to facilitate existing approved plans for mineral site restoration Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. Although, the effects would be uncertain as the potential for effects will depend on the exact nature and design of sites, which will not be known until the planning application stage.

SA Objective and Sub Questions	SA Score	Justification
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	In most cases proposals for the extraction of minerals, including aggregates, will have the potential to be restored to a high standard, achieving maximum after use benefits and enhancing the landscape. The policy also requires proposals to facilitate existing approved plans for mineral site restoration. Therefore, the policy is likely to have minor positive effects on this SA objective. Although, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which will not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+/-?	This policy could have a minor negative effect on this SA Objective, as aggregate workings could impact on nearby material, cultural or recreational assets. However, the policy requires mineral development proposals to facilitate enhancements for mineral restoration that will achieve beneficial after-uses such as enhancing the access to and the enjoyment of recreational facilities (e.g. Public Rights of Way). These however would be uncertain as they would not be known until the planning application stage, and where there is the potential for effects upon recreation they will be temporary.
11. To protect conserve and enhance geodiversity in Gloucestershire.	+/-?	Policy MA02 may lead to minor negative effects as the continued extraction and/or processing of primary aggregate may uncover and harm geological interests. However, potential sites can also contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. The policy will only permit proposals where among other things it can be demonstrated that the Allocations are not able to contribute towards maintaining minimum landbank levels, therefore proposals on unallocated sites are less certain to be developed. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of sites, which will not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive and minor negative effects on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+/-?	This policy is likely to have minor negative effects on this SA objective, as some aggregate sites (particularly crushed rock) will be intensive and could therefore negatively affect the historic environment (e.g. archaeology), heritage assets and their setting as a result of blasting. However, some sites may not be as an intensive and be able to preserve findings and therefore benefit our understanding of the local archaeology or contribute towards the local vernacular. Also, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of sites, which will not be known until the planning application stage. Therefore, the policy is likely to have uncertain, mixed minor positive/minor negative effects on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	This policy is expected to have an uncertain, minor negative effect on flood risk areas, as the Atkins hydrogeological reports identified potentially significant effects on flood risk for all of the ten Allocations, due mainly to backfilling during restoration using low permeability material. Therefore, other extraction proposals on sites outside of the Allocations could have similar effects on flooding. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures implemented during operations can reduce the significance of any negative residual impacts.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	Sites which come forward and are supported by this policy are likely to range from small to medium scale (i.e. less than 20ha) to large (i.e. over 20ha). However, the exact land take and location according to agricultural land quality (i.e. Grades 1 – 5), and whether improvements to soil quality through site restoration are possible; will not be known until the planning application stage. Therefore, effects on this SA Objective are likely to be minor negative uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-?	The policy may have a minor negative impact on this SA objective, as the policy supports aggregate operations outside of the ten Allocations. Therefore, proposals will involve activities (e.g. lorry traffic) that may negatively affect air quality, for example, due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the proposed highway network. The policy will only permit proposals where among other things it can be demonstrated that the Allocations are not able to contribute towards maintaining minimum landbank levels, therefore proposals on unallocated sites are less certain to be developed. Also, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the sites, which will not be known until the planning application stage. Therefore, the policy could have minor negative, uncertain effects on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	This policy is expected to have an uncertain, minor negative effect on water quality and quantity, as the Atkins hydrogeological reports identified potentially low, moderate and significant effects on water quality and quantity for all of the ten Allocations (due mainly to dewatering and diversion of groundwater, and increases in suspended solids or discharges of polluted water). These same effects could occur on extraction sites that come forward outside of the Allocations as well. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the proposals that come forward, which will not be known until the planning application stage. In addition, the Atkins hydrogeological reports note that mitigation measures

SA Objective and Sub Questions	SA Score	Justification
		implemented during operations can reduce the significance of any negative residual impacts.
17. 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	-?	This policy is likely to have minor negative effects on this SA objective, as the policy supports aggregate operations outside of the ten Allocations, which will involve lorry traffic movements, which at some sites may comprise multiple movements per day. The policy will only permit proposals where among other things it can be demonstrated that the Allocations are not able to contribute towards maintaining minimum landbank levels, therefore proposals on unallocated sites are less certain to be developed. Also, the exact location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage therefore these effects are uncertain.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of this policy on their ability to help reduce contributions to and to adapt to climate change as it will depend on the proposals they are used to determine and how successfully they are implemented, which would not be known until the planning application stage.

Policy DM01: Amenity

SA Objective and Sub Questions	SA Score	Justification
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 draft policy states that minerals development will only be permitted where it can be demonstrated that adverse impacts on local communities in terms of noise, air pollution, vibration and visual intrusion can be avoided or mitigated. These forms of pollution can otherwise have adverse effects on the health and wellbeing of residents and communities, and so the policy is likely to have a minor positive effect on this SA objective.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	++	The draft policy will have a direct significant positive effect on this SA objective as its purpose is to ensure that mineral developments avoid or mitigate adverse impacts on the amenity of local communities in Gloucestershire and neighbouring areas by means of noise, air pollution, vibration and visual intrusion.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	The policy will not have a direct effect on this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0	The policy will not have a direct effect on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The policy will not have a direct effect on this SA objective.
17. 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	0	The policy will not have a direct effect on this SA objective.
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective.

Policy DM02: Cumulative Impact

SA Objective and Sub Questions	SA Score	Justification
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.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated, Although this is assumed to include impacts on health, the policy does not specifically mention this, and as such an uncertain positive effect is expected on SA objective 1.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. Although this is assumed to include impacts on local amenity, the policy does not make specific mention of this, so an uncertain minor positive effect is likely on SA objective 2.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. Whilst this is likely to include effects on the economy of Gloucestershire, the policy does not specifically mention this, and as such, an uncertain minor positive effect is expected on SA objective 3.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could include consideration of employment opportunities, but as this is not specifically mentioned in the policy, any positive effect on this SA objective is currently uncertain.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	Consideration of cumulative effects of minerals development is unlikely to affect the safety of aerodromes, and no effect is expected on this 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.	0	Consideration of cumulative effects of minerals development is unlikely to affect the safeguarding of mineral resources from sterilisation from inappropriate development. No effect is therefore expected on SA objective 6.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could cover impacts on biodiversity, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely on SA objective 7.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could cover impacts on landscape, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely on SA objective 8.
9. To restore mineral sites to a high	0	Consideration of cumulative effects of minerals development is unlikely to affect the

SA Objective and Sub Questions	SA Score	Justification
standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.		restoration of minerals sites, and no effect is expected on this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could cover impacts on cultural and recreational assets in Gloucestershire, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely.
11. To protect conserve and enhance geodiversity in Gloucestershire.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could cover impacts on geodiversity and environmental quality in Gloucestershire, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely for this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could include consideration of the historic environment, but as this is not specifically mentioned in the policy, any positive effect on this SA objective is currently uncertain.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could include consideration of flooding issues, but as this is not specifically mentioned in the policy, any positive effect on this SA objective is currently uncertain.
14. To protect and enhance soil / land quality in Gloucestershire.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could include consideration of soil quality, but as this is not specifically mentioned in the policy, any positive effect on this SA objective is currently uncertain.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could cover impacts such as traffic and transport and air quality in Gloucestershire, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely on SA objective 15.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could cover impacts on water quality, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely for this objective.
17. To reduce the adverse impacts of lorry traffic on the environment and	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could

SA Objective and Sub Questions	SA Score	Justification
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		cover impacts on traffic and transport, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely for this objective.
18. To reduce contributions to and to adapt to Climate Change.	+?	This policy states that minerals development will be permitted where it can be demonstrated that unacceptable cumulative impacts will not be generated. This could cover impacts on air quality and traffic and transport, although the policy does not specifically mention this. An uncertain minor positive effect is therefore likely for this objective.

Policy DM03: Transport

SA Objective and Sub Questions	SA Score	Justification
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.	+?	Transport is a major issue when considering proposals for mineral development as the generation of significant amounts of road traffic can and does have negative impacts on local communities. The draft policy may have minor positive effects on this SA objective as it encourages alternative modes of non-road transport to serve mineral developments which could have benefits in terms of reducing emissions from road traffic which could improve local air quality. The policy states that development will be permitted where unacceptable impacts on road safety will be avoided which would also have benefits for health and safety. Public Rights of Way and National Trails are also protected from being adversely affected by minerals development in this policy, and this would help to maintain opportunities for walking, cycling and informal leisure. However, any effects would be uncertain as the potential for effects will depend on the exact nature, location and design of proposals, which will not be known until the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+?	Transport is a major issue when considering proposals for mineral development as the generation of significant amounts of road traffic can and does have negative impacts on local communities. The draft policy may have minor positive effects on this SA objective as it encourages new mineral developments to served by non-road modes of transport which should help to reduce road traffic which in turn would reduce noise and other forms of pollution. The policy also requires that Public Rights of Way should be retained and unacceptable impacts on such avoided which would help to ensure the continued enjoyment and safety of such routes. However, any effects would be uncertain as the potential for effects will depend on the exact nature, location and design of proposals, which will not be known until the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	This policy is unlikely to have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	This policy is unlikely to have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	This policy is unlikely to have a direct effect on this 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.	0	This policy is unlikely to have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+?	Transport is a major issue when considering proposals for mineral development as the generation of significant amounts of road traffic can and does have negative impacts on the environment. The draft policy may have minor positive effects on this SA objective as it encourages new minerals developments to be served by alternative modes of non-road transport, which could have positive effects on biodiversity through reducing disturbance associated with traffic (e.g. noise). However, any effects would be uncertain as the potential for effects will depend on the exact nature, location and design of proposals, which will not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+?	Transport is a major issue when considering proposals for mineral development as the generation of significant amounts of road traffic can and does have negative impacts on the environment. The draft policy may have minor positive effects on this SA objective as it encourages new mineral developments to be served by alternative modes of non-road transport, which could have benefits on the setting of landscapes if noise, vibration and traffic congestion is reduced. However, any effects would be uncertain as the potential for effects will depend on the exact nature, location and design of proposals, which will not be known until the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	This policy is unlikely to have a direct effect on this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	+	The transport policy requires minerals development proposals to demonstrate that Public Rights of Way (PRoWs) will be retained, and/or that temporary or permanent diversion of PRoW routes are justified and/or that the formal closure of PRoW routes represents a

SA Objective and Sub Questions	SA Score	Justification
		very exceptional circumstance, and that unacceptable adverse impacts will be avoided or satisfactorily mitigated (e.g. on the safety, integrity and enjoyment of affected routes). Therefore, it is likely to have a positive effect on conserving and enhancing some of Gloucestershire's recreational assets (i.e. the PRoW network).
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	This policy is unlikely to have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+?	Vibration and emissions from increased road traffic associated with mineral developments can have adverse impacts on the setting, fabric and structure of the historic environment and heritage assets. As the policy seeks to minimise road traffic derived from mineral works activity, a minor positive effect is likely on this SA objective. Any effects however, would be uncertain as the potential for effects will depend on the exact nature and design of proposals, which will not be known until the planning application stage.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	This policy is unlikely to have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	This policy is unlikely to have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	++?	Transport is a major issue when considering proposals for mineral development as the generation of significant amounts of road traffic can and does have negative impacts on the environment. The draft policy may have significant positive effects on reducing air pollution arising from minerals related traffic, as it encourages new mineral developments to be served by alternative modes of non-road transport and requires that new developments should not have adverse effects on the capacity of the highway network which should help to reduce traffic and congestion. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals, which will not be known until the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	This policy is unlikely to have a direct effect on this SA objective.
17. To reduce the adverse impacts of lorry traffic on the environment and	++?	Transport is a major issue when considering proposals for mineral development as the

SA Objective and Sub Questions	SA Score	Justification
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		generation of significant amounts of road traffic can and does have negative impacts on the environment. The draft policy may have significant positive effects on this SA objective as it encourages mineral developments to be served by alternative modes of non-road transport which would have direct benefits for reducing the impacts of large vehicles on the environment. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals, which will not be known until the planning application stage.
18. To reduce contributions to and to adapt to Climate Change.	+?	Transport is a major issue when considering proposals for mineral development as the generation of significant amounts of road traffic can and does have negative impacts on the environment. The draft policy may have minor positive effects on this SA objective as it encourages alternative modes of non-road transport, which would help to reduce local CO2 emissions from road traffic and reduce local contributions to Climate Change. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals, which will not be known until the planning application stage.

Policy DM04: Flood Risk

SA Objective and Sub Questions	SA Score	Justification
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.	+	Flooding can endanger lives, damage settlements and can also adversely affect the health of people. This is evident in Gloucestershire as the major rivers in Gloucestershire frequently flood. Therefore, the draft policy may have a minor positive effect on this SA objective, as it supports the reduction in the likelihood and impact that minerals development could have on flooding by ensuring that appropriate flood zones are utilised.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+	Flooding can endanger lives, damage settlements and the amenity of communities. This is evident in Gloucestershire as the major rivers in Gloucestershire frequently flood. Therefore, the draft policy may have a minor positive effect on this SA objective, as it supports the reduction in the likelihood and impact that minerals development could have on flooding whilst ensuring minerals developments are located within appropriate Flood Zones.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The draft policy will not have a direct effect on this SA objective..
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The draft policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The draft policy will not have a direct effect on this 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.	0	The draft policy will not have a direct effect on this SA objective..
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+	Flooding can adversely affect habitats. This is evident in Gloucestershire as the major rivers in Gloucestershire frequently flood. Therefore, the draft policy may have a minor positive effect on this SA objective, as it supports the reduction in the likelihood and impact that minerals development could have on flooding whilst ensuring minerals developments are located within appropriate Flood Zones.

SA Objective and Sub Questions	SA Score	Justification
8. To protect, conserve and enhance the landscape in Gloucestershire.	+	Flooding can damage buildings and settlements and also adversely affect the characteristics of landscapes. This is evident in Gloucestershire as the major rivers in Gloucestershire frequently flood. Therefore, the proposed policy may have minor positive effects on this SA objective, as it supports the reduction in the likelihood and impact that minerals development could have on flooding whilst ensuring minerals developments are located within appropriate Flood Zones.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The proposed policy could have minor positive effects on this SA objective as 'water compatible' development i.e. sand and gravel workings can possibly assist in adding to flood capacity where the restoration is water based and does not lead to a net loss in flood plain storage. Water based restoration may provide a range of benefits both to the conservation and enhancement of biodiversity, and/or for recreational purposes. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until proposals come forward.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The draft policy will not have a direct effect on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The draft policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+	Flooding can damage buildings, historic structures and archaeology, and adversely affect the characteristics of landscapes. This is evident in Gloucestershire as the major rivers in Gloucestershire frequently flood. The policy seeks to ensure that minerals development is located in appropriate flood zones, and does not result in an increase in the risk of flooding elsewhere. Therefore, the draft policy may have a minor positive effect on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	++	The draft policy is likely to have a direct significant positive effect on this SA objective as it supports the reduction in the likelihood and impact that minerals development has on flooding by ensuring developments are located within appropriate Flood Zones.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The draft policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The draft policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The draft policy will not have a direct effect on this SA objective.
17. 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	0	The draft policy will not have a direct effect on this SA objective.
18. To reduce contributions to and to adapt to Climate Change.	+	As the climate changes flooding is an increasing threat in Gloucestershire and the issues are increasingly complex. Therefore, reducing the likelihood and impact that minerals development could have on flooding is likely to have a minor positive impact on this SA objective.

Policy DM05: Water Environment

SA Objective and Sub Questions	SA Score	Justification
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 draft policy is likely have a minor positive effect on this SA objective, as it seeks to protect the water environment by ensuring that minerals development avoid or mitigate adverse impacts on the quality and quantity of water resources.. This will help ensure the protection of major aquifers, Groundwater Source Protection Zones and Drinking Water Safeguarding Zones which sites can be constructed in or in close proximity to, thereby protecting public drinking water supplies, which will prevent any effects on the health and wellbeing of local communities and visitors to Gloucestershire.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0	The policy will not have a direct effect on this SA objective.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+	The policy will have a minor positive effect on this SA objective as it will help prevent the deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
9. To restore mineral sites to a high standard in order to achieve the	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.		
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The policy will not have a direct effect on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0	The policy will not have a direct effect on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	++	The proposed policy is likely to have a direct significant positive effect on this SA objective as it seeks to protect the water environment by ensuring that minerals development avoid or mitigate adverse impacts on the quality and quantity of water resources.
17. 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	0	The policy will not have a direct effect on this SA objective.
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective.

Policy DM06: Biodiversity and Geo-diversity

SA Objective and Sub Questions	SA Score	Justification
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 will not have a direct effect on this SA objective.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0	The policy will not have a direct effect on this SA objective.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	++	The policy is likely to have a direct significant positive effect on this SA objective as it requires that all minerals development should avoid adverse effects on designated nature conservation sites and species or satisfactorily demonstrate that mitigation measures will be provided. This should conserve and enhance the natural environment of Gloucestershire.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+	Important habitats and biodiversity have a strong relationship with many of the important landscapes in the county such as the Areas of Outstanding Natural Beauty. The conservation and enhancement of biodiversity via the proposed policy will therefore have minor positive effects on this SA objective, as it will also protect and contribute

SA Objective and Sub Questions	SA Score	Justification
		towards the important landscapes within Gloucestershire.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	The policy will not have a direct effect on this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The policy will not have a direct effect on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	++	The policy is likely to have a significant positive effect on this SA objective as it requires all minerals development proposals to avoid adverse impacts on geodiversity, and states that developments should conserve and enhance the natural environment.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0	The policy will not have a direct effect on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The policy will not have a direct effect on this SA objective.
17. 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	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
d) the use of sustainable alternative fuels		
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective

Policy DM07: Soils

SA Objective and Sub Questions	SA Score	Justification
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 will not have a direct effect on this SA objective.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0	The policy will not have a direct effect on this SA objective.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+?	The draft policy seeks to ensure that minerals development does not have unacceptable adverse impacts on soil resources and high grade agricultural land. This would help to maintain employment opportunities in the traditional agricultural sector of Gloucestershire. Any positive effect is currently uncertain as the policy allows for the benefits of minerals development to outweigh adverse impacts on the quality of soil resources.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The policy will not have a direct effect on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0	The policy will not have a direct effect on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	++	As this policy protects the quality of soil resources and agricultural land of higher grade, a significant positive effect is expected on SA objective 14 as the policy directly relates to soil quality in Gloucestershire.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The policy will not have a direct effect on this SA objective.
17. 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	0	The policy will not have a direct effect on this SA objective.
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective.

Policy DM08: Historic Environment

SA Objective and Sub Questions	SA Score	Justification
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 will not have a direct effect on this SA objective.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0	The policy will not have a direct effect on this SA objective.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+	The proposed policy is likely to have a minor positive effect on this SA objective, as the policy aims to protect and conserve the historic environment, including the character and setting of designated and non-designated heritage assets, which includes historic landscapes, conservation areas and listed buildings which are located within these landscapes. This is important as minerals development can have a serious impact on the historic environment, although this can vary depending on the nature of the minerals development and associated works, and the nature of the historic environment within which it is located. The policy also recognises the need for the mitigation of the impact of minerals development on the historic environment.

SA Objective and Sub Questions	SA Score	Justification
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	The policy will not have a direct effect on this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The policy will not have a direct effect on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	++	The proposed policy is likely to have a direct significant positive effect on this SA objective, as the policy aims to protect and conserve the historic environment, including designated heritage assets and their integrity, character and setting, and of those non-designated heritage assets with archaeological interest. This is important as minerals development can have a serious impact on archaeological sites or other elements of the historic environment, although this can vary depending on the nature of the minerals development and associated works, and the nature of the historic environment within which it is sited. The policy also recognises the need for the mitigation of the impact of minerals development on archaeology and the historic environment
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The policy will not have a direct effect on this SA objective.
17. To reduce the adverse impacts of lorry traffic on the environment and communities through means such as: a) reducing the need to travel	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
b) promoting more sustainable means of transport e.g. by rail or water c) sensitive lorry routing d) the use of sustainable alternative fuels		
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective.

Policy DM09: Landscape

SA Objective and Sub Questions	SA Score	Justification
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 will not have a direct effect on this SA objective.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+	Preventing adverse effects of minerals development on the local landscape and ensuring Areas of Outstanding Natural Beauty are safeguarded from adverse effects, and appropriately considered and enhanced via restoration in the longer term is likely to ensure that the visual amenity of residents and visitors to Gloucestershire is protected. A minor positive effect is therefore likely for this SA objective.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	+?	The policy might have an indirect minor positive effect on economic development as it requires minerals development proposals within the Cotswolds, Wye Valley and Malvern Hills AONBs to demonstrate that the local economy will not be subject to unacceptable adverse impacts.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
8. To protect, conserve and enhance the landscape in Gloucestershire.	++	The draft policy is likely to have a significant positive effect on this SA objective, as it aims to protect the general landscape from adverse effects , as well as ensure that AONBs are protected and enhanced by minerals development, including their special qualities, both within their boundaries and by developments that affect their settings.

SA Objective and Sub Questions	SA Score	Justification
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The draft policy could have minor positive effects on this SA objective as minerals development within or affecting the setting of the AONBs will only be permitted where it can be demonstrated that landscapes can be restored and, where possible, enhanced in the longer term. This may result in a high standard of restoration to ensure that restored sites are sympathetic to their surrounding landscape and provide benefits to it, although these benefits are yet unknown.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The policy will not have a direct effect on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	+?	Preventing adverse effects on the local landscape and ensuring Areas of Outstanding Natural Beauty are protected from adverse effects, and appropriately considered and enhanced via restoration in the longer term could have a minor positive effect on the historic environment through the protection and enhancement of heritage assets and their setting. The effect is uncertain however depending on the location of such assets.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The policy will not have a direct effect on this SA objective.
17. 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	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
d) the use of sustainable alternative fuels		
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective.

Policy DM10: Gloucester-Cheltenham Green Belt

SA Objective and Sub Questions	SA Score	Justification
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 draft policy seeks to ensure that minerals development within the Green Belt preserve its openness which should help to maintain the extent of open space in the countryside which might be used by residents for recreational activities thus promoting healthier lifestyles. A minor positive effect is therefore likely.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+	The draft policy seeks to ensure that minerals development within the Green Belt preserves its openness. This is likely to help protect the visual amenity of residents and visitors alike, and a minor positive effect is likely.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+	The draft policy could have a minor positive effect on this SA objective, as it requires that mineral developments in the Green Belt preserve its openness. Green Belt land can be important for biodiversity and so this will help to protect and conserve biodiversity within the Green Belt.
8. To protect, conserve and enhance the landscape in Gloucestershire.	+	The draft policy could have a minor positive effect on this SA objective, as it seeks to ensure that minerals development in the Green Belt preserve its openness. This should help to protect the character and quality of the countryside and help to retain settlement identity and sense of place.

SA Objective and Sub Questions	SA Score	Justification
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	The policy will not have a direct effect on this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The policy will not have a direct effect on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0	The policy will not have a direct effect on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The policy will not have a direct effect on this SA objective.
17. 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	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective.

Policy DM11: Aerodrome Safeguarding and Aviation Safety

SA Objective and Sub Questions	SA Score	Justification
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 will not have a direct effect on this SA objective.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0	The policy will not have a direct effect on this SA objective.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	++	The draft policy states that minerals developments will only be permitted whereby it is demonstrated that unacceptable impacts on aviation safety can be avoided or mitigated. As the policy directly addresses SA objective 5, a significant positive effect is expected.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	0	The policy will not have a direct effect on this SA objective.
10. To protect conserve and enhance Gloucestershire's material, cultural and	0	The policy will not have a direct effect on this SA objective.

SA Objective and Sub Questions	SA Score	Justification
recreational assets.		
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0	The policy will not have a direct effect on this SA objective.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	0	The policy will not have a direct effect on this SA objective.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The policy will not have a direct effect on this SA objective.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The policy will not have a direct effect on this SA objective.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	0	The policy will not have a direct effect on this SA objective.
17. 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	0	The policy will not have a direct effect on this SA objective.
18. To reduce contributions to and to adapt to Climate Change.	0	The policy will not have a direct effect on this SA objective.

Policy MR01 Restoration, aftercare and facilitating beneficial after-uses

SA Objective and Sub Questions	SA Score	Justification
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.	+?	Policy MR01 requires mineral development proposals to positively contribute towards the improvement of the health, wellbeing and quality of life to local communities. As such, a minor positive effect is likely on this SA objective. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	+?	Policy MR01 requires mineral development proposals to positively contribute towards the improvement of environmental quality which should help to safeguard the amenity of local communities. As such, a minor positive effect is likely on this SA objective. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	The policy will not have a direct effect on this SA objective.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	0	The policy will not have a direct effect on this SA objective.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The policy will not have a direct effect on this 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.	0	The policy will not have a direct effect on this SA objective.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. Reclamation proposals may include nature conservation, which would have a positive effect on biodiversity. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
8. To protect, conserve and enhance	+?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental

SA Objective and Sub Questions	SA Score	Justification
the landscape in Gloucestershire.		condition at the earliest opportunity. Reclamation proposals may include native woodland or nature conservation, which may have a positive effect on landscape character. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	++	This policy is expected to have a significant positive effect on SA objective 9 as it directly relates the restoration of mineral sites, and requires reclamation of mineral workings to be completed in phases, and to a high environmental standard.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. It is uncertain whether this would include the creation of cultural and recreational assets such as open spaces or Public Rights of Way, and currently a negligible effect is expected on this SA objective. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
11. To protect conserve and enhance geodiversity in Gloucestershire.	+?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. Reclamation proposals may include geological conservation, which would have a positive effect on geodiversity. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	0?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. It is uncertain whether this would include the conservation or enhancement of the historic environment, and currently a negligible effect is expected on this SA objective. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	+?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. Reclamation proposals may include open water for flood alleviation, which would have a positive effect on preventing flooding. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.

SA Objective and Sub Questions	SA Score	Justification
14. To protect and enhance soil / land quality in Gloucestershire.	+?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. Reclamation proposals may be to agriculture, which would have a positive effect on soil quality. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. It is uncertain whether this would include the protection or enhancement of air quality, and currently a negligible effect is expected on this SA objective. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	+?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. Reclamation proposals may include open water for water storage, which may have a positive effect on water quantity in Gloucestershire. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.
17. 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	0	The requirement for mineral workings to be reclaimed to a high environmental standard is unlikely to affect mineral related traffic movements, and no effect is expected on SA objective 17.
18. To reduce contributions to and to adapt to Climate Change.	+?	Policy MR01 requires mineral workings to be reclaimed to an acceptable environmental condition at the earliest opportunity. Reclamation proposed may include open water for flood alleviation, which would have a positive effect on adaptation to extreme weather events as a result of climate change. However, effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.

Appendix 6
Site appraisal matrices

Allocation 01 – Preferred Area at Stowe Hill / Clearwell (Previously CRFD1 Stowe Hill/Clearwell Parcels A & B)

SA Objective and Sub Questions	SA Score	Justification
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.	-?	Longley Farm is located within the site boundary and many residential properties are adjacent to the site boundary, including Trowgreen Farm and Yew Tree Cottage (adjacent to the western boundary of the site) and Shop House Farm (adjacent to the northern boundary). The nearest settlement is Stowe, located less than 500m to the west of the site. Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have a negative effect on the health of local residents, communities and visitors to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site, Longley Farm, Trowgreen Farm, Yew Tree Cottage and Stowe in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	Longley Farm is located within the site boundary and many residential properties are adjacent to the site boundary, including Trowgreen Farm and Yew Tree Cottage (adjacent to the western boundary of the site) and Shop House Farm (adjacent to the northern boundary). The nearest settlement is Stowe, located less than 500m to the west of the site. Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be more likely as the site would work crushed rock which would require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. The site is not within 100m of any areas allocated for new residential development in the Forest of Dean District Council Adopted Core Strategy or Submitted Allocations Plan, therefore there should not be any landuse conflict. The site is within 1km of the settlements Stowe, Clearwell and Trow Green and is

SA Objective and Sub Questions	SA Score	Justification
		proposed as an extension area to the existing Clearwell/Stowe Hill Quarries, therefore, continuing crushed rock extraction activity in this area could have a cumulative effect on the amenity of the local community. The GCC assessment notes that the site has the potential to be worked by either existing or replacement plant/access. A new access route could provide benefits to the local amenity of the residents in Stowe Green by reducing lorry traffic on existing local roads. Therefore, if the site were to be allocated for mineral extraction, the GCC assessment notes that planning permission for use of the site would require conditions to enforce the use of the new access, which could mitigate the potential negative effects of lorry traffic. However, in the short term, there could be additional noise and vibration impacts during construction of the new access route. The detailed development requirements for Allocation 01 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts, with consideration given to the local hamlets of Stowe, Stowe Green, Trow Green, Mork and Lower Cross and the villages of Clearwell, Sling and St. Briavels. This should help provide mitigation for the potential negative effects identified. The Draft MLP also specifies the need for a transport assessment, with advice from the Local Highways Authority.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The site is not within an aerodrome safeguarding area and is therefore not expected to have an effect on this objective.

SA Objective and Sub Questions	SA Score	Justification
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The site is assessed as having a potential negative impact on biodiversity as the northern boundary is within 700m of Tudor Farm Bank SSSI, Old Bow and Old Ham Mines SSSI and Wye Valley & Forest of Dean Bat Sites SAC. Additionally, the site is within 1km of many Key Wildlife Sites, one of which (Orles Wood KWS) is adjacent to the south boundary of the site. The hydrogeological report by Atkins (May 2016) identified a possible negative effect on water quality for local wildlife and sensitive vegetation. However, the report concluded this was of 'low significance'. The 2014 GCC site assessment noted that impacts on Tudor Farm Bank SSSI are thought to be unlikely. However, if the site is enhanced then it could make a contribution to Wye Woods Strategic Nature Area (SNA), as the site overlaps this SNA. Therefore, the site has been assessed as having the potential to have a mixed minor negative and positive effect on this objective. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The 2016 HRA Report[60] concluded after screening, that this was the only Allocation site that might have minor residual effects alone (only in relation to the area previously referred to as Parcel B), and taking a precautionary approach some uncertainty remained, and therefore a consideration of in combination effects alongside other plans and projects was needed. The minor residual effects identified were in relation to potential impacts on bat habitat and flyways at CRFD1 which could be important to the well-being of the Wye Valley & Forest of Dean Bat Sites SAC (Old Bow & Old Ham Mines) which is at its nearest point about 750 metres away to the north east, and another another component part of the SAC (Devil's Chapel Scowles) 2.8km to the south east, plus the Wye Valley Woodlands SAC which is 1.8km away to the south west at its closest point. The main issue is whether horseshoe bats from or associated with the Wye Valley Woodlands or the Forest of Dean Bat Sites SAC may depend on what remains of a much degraded hedgerow network within Allocation 1. Following the review of other plans and projects, the 2016 HRA Report concludes that there is not likely to be a significant effect on the SACs in combination with the other relevant plans and projects, and therefore the Appropriate Assessment stage is not required.

[60] HRA Main Report for Gloucestershire MLP (Vers. 1.2 at Pre-Publication Stage), Gloucestershire County Council, 2016.

SA Objective and Sub Questions	SA Score	Justification
		The detailed development requirements for Allocation 01 in Appendix 6 of the Draft MLP specify the need for an analysis of potential impacts on the natural environment in regards to Wye Valley & Forest of Dean Bat Sites, Wye Valley Woodlands SAC, Tudor Farm Bank SSSI, and the Slade Brook SSSI. The analysis will also need to investigate impacts on priority habitats and species which have been adjacent or near to the site. The detailed development requirements also specify that restoration plans should be explored, including agriculture and woodland after-uses, along with opportunities to achieve biodiversity enhancements. This should help provide mitigation for the potential negative effects identified.
8. To protect, conserve and enhance the landscape in Gloucestershire.	--?	The site is 150m to the east of the Wye Valley AONB. The landscape assessment carried out by Atkins (June 2015) judged that there would be a significant Moderate Adverse impact on the regional Landscape Character Area, primarily as a result of workings within Parcel B. Therefore, a significant negative effect is identified for this objective. However, uncertainty is attached, as a more detailed assessment would be required once specific proposals and mitigation measures are known. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged that there would be significant Major Adverse visual impacts on Longley Farm which is located within the centre of the Site and Shop House Farm, Trowgreen Farm and property just north of Trowgreen Farm. It would not be possible to avoid these significant impacts due to the proximity and clarity of the view from these receptors. It would also result in significant Moderate Adverse visual impacts on farmland, public footpaths RNE67, RNE66, RNE61 and RNE70 and transport receptors B4231 / Bream Avenue and B4228. The mitigation measures outlined in the November 2014 LVIA would reduce the scale of impacts on the transport receptors to some degree through mounding and planting along the boundary of Parcel A. The detailed development requirement for Allocation 01 in Appendix 6 of the Draft MLP specifies the need for a Landscape & Visual Impact Assessment, which will analyse the sensitivity of national landscape character NCA 105 (Forest of Dean and Lower Wye) and the regional / local level classification – The Limestone Plateau landscape character type and the Tidenham Chase landscape character area, which are both described in the Forest of Dean Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this

SA Objective and Sub Questions	SA Score	Justification
the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.		would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The detailed development requirements for Allocation 01 in Appendix 6 of the Draft MLP specifies that restoration plans should be explored including agriculture and / or woodland after-uses, along with opportunities to achieve biodiversity enhancements.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The PRoW footpath RNE/66/2 runs through the site west to east, and footpath RNE/66/1 runs along the north western boundary of the site. Additionally, RNE/67/1 and FSB/138/1 run along the western edge of the site. The GCC PRoW Team has identified that a diversion would be required for footpath FSB/138/1.Therefore, the site could have minor negative effects on recreation activities as the PRoWs might be out of use while diverted, and minerals extraction at the site could make nearby recreational assets less attractive for users. The detailed development requirements for Allocation 01 in Appendix 6 of the Draft MLP specifies that an assessment of the PRoW network should be undertaken with particular attention given to paths RNE 66/1, RNE 67/1 and FSB 138/1. Advice should be sought from the Local Highways Authority regarding any proposals to temporarily divert or permanently re-route any of the potentially affected paths.
11. To protect conserve and enhance geodiversity in Gloucestershire.	-?	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is within 1km but greater than 500m from the Slade Brook geological SSSI and two Regionally Important Geological Sites: Stock Wood (north of the site); and Bearse Farm Quarry (south of the site) and is not considered likely to affect geodiversity. The western boundary of the site is within 400m of Stowe Green Quarry which is designated as a Regionally Important Geological Site[61] The GCC assessment notes there may be potential for impacts on the tufa dam feature of the Slade Brook SSSI. Therefore, the site could have a minor negative effect on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the site, and therefore will need detailed

[61] While the government has proposed to change the name of Regionally Important Geological Sites (RIGS) to Local Geological Sites; in Gloucestershire they are still referred to as RIGS.

SA Objective and Sub Questions	SA Score	Justification
		assessment at the planning application stage. The Draft MLP also specifies the need for an assessment of potential impacts on Stowe Green / Clearwell Quarries RIGS no. 236 should be carried out which incorporates possible mitigation measures, if required.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	--?	The north boundary of the site is within 250m of of Clearwell Castle Registered Park and Garden, and within 450m of Clearwell Conservation Area and the listed buildings located within it and adjacent to it. The western boundary of the site is within 500m of Camp NE of Stowe Scheduled Ancient Monument and a cluster of listed buildings, the closest being the Chapel of St Margaret at Longley Farm (Grade II). The eastern boundary of the site is within 100m of Toll House Listed Building (Grade II). The Atkins landscape report (June 2015) concluded that the proposed development would result in a localised and significant Major Adverse impact on the setting of this Grade II Listed Building to the east of Parcel B. The mitigation measures outlined in the November 2014 LVIA would reduce the scale of impacts on this receptor but would still result in an enclosure of the setting. Therefore, the site could have a significant negative effect on the setting of the Toll House Grade II Listed Building. However, the effects would be uncertain as a more detailed assessment would be required once proposals are known. Furthermore the GCC assessment notes that the archaeological interest in the site is as yet uncertain, therefore assessment and evaluation will be required to establish the extent and significance of any heritage assets present within the site. However, the GCC assessment notes that there would be no historic environment implications from any depth increase in the existing quarry. The detailed development requirements in Appendix 6 of the MLP specifies the need for an archaeological assessment, including both a pre-determination evaluation of the presence and significance of heritage assets and a mitigation strategy which may introduce restraints to future mineral working in order to preserve key heritage assets and their settings.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	A hydrogeological assessment carried out by Atkins found that there could be a significant impact on the potential for an increase in the risk of flooding from surface water and groundwater. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After restoration, it is likely that surface pooling on site will increase if impermeable material is used.

SA Objective and Sub Questions	SA Score	Justification
		With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upgradient of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirement for Allocation 01 in Appendix 6 of the Draft MLP specifies the need for a flood risk assessment, which affords attention to the possibility of elevated risks associated with groundwater flooding and increased surface water run-off. Potential sensitive receptors surrounding the site should be investigated.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a large area (54ha) and is within grade 3 agricultural land and could therefore have a minor negative effect on protecting or enhancing soil/land quality. However, this effect is uncertain as there may be opportunities to restore agricultural soils during restoration.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA but is more than 1km from the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The site is not within a source protection zone but the majority of the site overlies a Principal aquifer, as well as a Secondary A aquifer to the west which may provide a high level of water storage and support water supply and/or river base flow on a strategic scale. A hydrogeological impact assessment was carried out by Atkins. Low significance was placed on the potential for de-watering and diversion of groundwater away from the areas of the principal aquifer and secondary A aquifer, leading to a decrease in water quality. A significant effect was predicted on Slade Brook SSSI, which relates to a potential increase in suspended solids, the potential for an increase in overland flow, changes to base flow as a result of de-watering and/or inert infill and the potential for changes to carbonate content of groundwater, leading to changes to Tufa formation processes. During operation, there may be an increase in suspended sediments,

SA Objective and Sub Questions	SA Score	Justification
		leading to a decline in water quality. De-watering during operation can also result in diversion of water from the Slade Brook as groundwater flow paths are interrupted. Changes to the conservation status of the SSSI are possible, due to changes to flow or chemistry. After restoration, the site is likely to be partially backfilled, increasing overland flow. A reduction in baseflow contribution is also possible, due to the barrier created to groundwater flow. A minor negative effect is therefore predicted for this site, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 01 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment to be completed, which will consider potential risks, their significance and possible mitigation measures, if required, on the nearby surface water bodies up to 1km from the Preferred Area. In addition, a review of the underlying geology should also be carried out to identify the presence of a designated aquifer and identify potential mitigation measures.
17. 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	-?	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. However, this is uncertain as the 2014 GCC assessment noted that the site has the potential to be worked by either existing or replacement plant/access. A new access route could provide benefits to the local amenity of the residents in Stowe Green by reducing lorry traffic on existing local roads. Therefore, if the site were to be allocated for mineral extraction, the GCC assessment noted that planning permission for use of the site would require conditions to enforce the use of the new access, which could mitigate the potential negative effects of lorry traffic. However, the detailed development requirements for Allocation 01 in Appendix 6 of the Draft MLP specify the preference for the use of access off the B4228 into the existing Stowe Hill Quarry, instead of creating a new vehicular access.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 02 – Preferred Area at Drybrook (Previously CRFD2 Drybrook Parcel A)

SA Objective and Sub Questions	SA Score	Justification
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.	-?	Ash Farm is located within and adjacent to the southern boundary of the site and Perlay (a residential building) is located within the northern area of the site. Forest View (a residential building) is also located within 100m of the southern boundary. The site is also located within 100m of the settlements Drybrook and Ruardean. Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have a negative effect on the health of local residents, communities and visitors to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site, Ash Farm, Perlay and Forest View in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	Ash Farm is located within and adjacent to the southern boundary of the site and Perlay (a residential building) is located within the northern area of the site. Forest View (a residential building) is also located within 100m of the southern boundary. The site is also located within 100m of the settlements Drybrook and Ruardean. Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be more likely as the site would work crushed rock which would require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. Drybrook was identified in the Forest of Dean District Council Adopted Core Strategy (February 2012) to provide 100 new dwellings within the defined settlement, which is shown in two allocation on the east of the village in the Submitted Allocations Plan, neither of which is within 100m of the Preferred Area at Allocation 02, so there will not be any landuse.

SA Objective and Sub Questions	SA Score	Justification
		The site is within 1km of the settlements Drybrook and Ruardean and is proposed as an extension area to the currently mothballed Drybrook Quarry. Whilst it was operational, Drybrook Quarry produced a variety of limestone aggregate product and a certain amount of plant and buildings remain on the site. It is anticipated that the proposed site would only be considered as a potential extension area to Drybrook Quarry. Therefore, crushed rock extraction activity would continue in this area and could have a cumulative effect on the amenity of the local community. The GCC site assessment 2016 states that this site should use existing access and infrastructure unless a suitable alternative access can be demonstrated. Production rates should be maintained at or near to levels prior to the mothballing of the Quarry. However, this is uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirement for Allocation 02 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts. Careful consideration should be paid to the local communities made up of the individual residential properties, farms and commercial enterprises located nearby to the Preferred Area and those that comprise the settlements of Ruardean, Ruardean Hill, Drybrook and Puddlebrook.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The site is not within an aerodrome safeguarding area and is therefore not expected to have an effect on this objective.

SA Objective and Sub Questions	SA Score	Justification
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	0	The site is unlikely to have impacts on biodiversity due to the site being mainly agricultural grass land with some hedgerows and trees, within 1km of two local wildlife sites (Hope Mansell and Lea Bailey Enclosure (both within Herefordshire)), and the southern boundary of the site being within 400m of Ruardean Hills Key Wildlife Site. The 2016 HRA Report states that "Allocation 2: Preferred Area at Drybrook comprises of parcel A (CRFD2) previously considered at the Site Options stage of the draft MLP. Previously all parcels of land were screened out because there are no European Sites nearby or with a pathway present to result in any conceivable effect on any conservation objectives. It follows therefore that Allocation 2 Preferred Area at Drybrook can also be screened out from further consideration within the HRA." The GCC site assessment 2016 noted some potential for biodiversity enhancement if the small woods nearby to the site were to be linked to any restoration scheme. However, these effects would be minor and are not certain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. Therefore, overall the site is not expected to affect this objective.
8. To protect, conserve and enhance the landscape in Gloucestershire.	-?	A landscape assessment carried out by Atkins (June 2015) concluded that overall there will not be any significant impacts on the wider landscape character or features of the area as the development of the site would result in an extension of the visual impacts arising from the existing quarry. The proposed development will result in some localised impacts to agricultural land and associated hedgerows within the site boundary. Therefore, a minor negative effect is identified for this objective. However, uncertainty is attached, as a more detailed assessment would be required once specific proposals and mitigation measures are known. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also concluded that there would be significant Major Adverse visual impacts on isolated properties at the western end of Morse Lane and public footpaths DDB1, DRD43 and DRD72. Due to the proximity of the receptors affected, it would not be possible to avoid these significant impacts although they could be mitigated to some degree by sensitive boundary treatments to the site. The proposed development would also result in significant Moderate Adverse impacts on residential

SA Objective and Sub Questions	SA Score	Justification
		properties in the south-west of Drybrook and public footpaths DRD42 and DRD45. Due to the position of these receptors on elevated ground with direct views towards the site it would not be possible to avoid these significant impacts through mitigation measures. The detailed development requirement for Allocation 02 in Appendix 6 of the Draft MLP specifies the need for a Landscape & Visual Impact Assessment, which will analyse the sensitivity of national landscape character NCA 105 (Forest of Dean and Lower Wye) and the regional / local level classification – The Limestone Hills landscape character type and the Ruardean Hills landscape character area, which are both described in the Forest of Dean Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The PRoW footpath DRD/11/1 runs through the middle of the site north to south, while footpath DRD/72/1 runs through a small area in the northeast of the site and then runs along the eastern boundary of the site. The GCC PRoW Team has identified that a diversion will be necessary for footpath DRD/11/1. Furthermore, the footpaths DRD/43/1 and DRD/10 run along the western and norther boundaries of the site respectively. The GCC PRoW Team has identified that a diversion will be necessary for footpath DRD/43/1. The GCC PRoW Team also state that mineral developments could well offer opportunity of enhancement, but at this stage and without checking on the ground or consulting the parishes, it is too early to be exact. Therefore, the site could have minor negative effects on recreation activities as the PRoWs might be out of use while diverted, and minerals extraction at the site could make nearby recreational assets less attractive for users. The detailed development requirement for Allocation 02 in Appendix 6 of the Draft MLP specifies the need for an assessment of the PRoW network which should be undertaken with particular attention given to paths DRD 11 and 43.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site,

SA Objective and Sub Questions	SA Score	Justification
		which would not be known until the planning application stage. The site is more than 500m from any national site of geological interest (SSSI) or Regionally Important Geological Site and is therefore not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	The western boundary of the site is within 1km of Ruardean Conservation Area and some of the listed buildings located within it, the closest being Holick Monument located approximately 960m to the west of the site. The site is also located within 1km of two other listed buildings, one located to the north east and one to the south west of the site. The Atkins Landscape Report (June 2015) found that the sensitivity of the historic landscape character (HLC) in relation to the proposed development is judged to be moderate adverse. The existing HLC of the site will change to become an active industrial site. This change is judged to result in a noticeable change to the HLC which is judged to be a Medium magnitude of change. It also noted that although the sensitivity of nearby Ruardean, Mitcheldean and Lydbrook Conservation Areas and the Ruardean Castle Scheduled Monument to the proposed development is high, the magnitude of change would be would be negligible as the proposal would not result in a discernible change to the setting or character of the Conservation Areas or the Scheduled Monument. The archaeological interest in this site is as yet uncertain. Evidence from the surrounding landscape and the previous, adjacent quarrying suggests the presence of some early activity of prehistoric or Roman date. Assessment/evaluation will be required to establish the extent and significance of any heritage assets present. Therefore, the site has some potential for minor negative effects on the historic environment and archaeology, however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. The detailed development requirement for Allocation 02 in Appendix 6 of the Draft MLP specifies the need for an assessment of heritage assets for the Preferred Area that incorporates an analysis of its potential archaeological interest. This must include both a pre-determination evaluation to establish the presence and significance of heritage assets; and a mitigation strategy that could introduce constraints upon future mineral working and associated activities in order to preserve key heritage assets and their settings; and the archaeological recording and / or excavation of all other heritage assets.
13. To prevent flooding, in particular preventing inappropriate development	-?	A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required,

SA Objective and Sub Questions	SA Score	Justification
in the floodplain.		and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After restoration, backfilling of the area with lower permeability material is likely to increase runoff after a rainfall event, which will increase risk of flooding. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirement for Allocation 02 in Appendix 6 of the Draft MLP specifies the need for a flood risk assessment which affords attention to the possibility of elevated risks associated with groundwater flooding and increased surface water run-off. Potential sensitive receptors include the residential properties and commercial premises of Ruardean, the northern side of Ruardean Hill and Drybrook.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a medium area (11ha) and is mainly within grade 2 agricultural land and could therefore have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA but is more than 1km from the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The site is not within a source protection zone but the site overlies a Principal aquifer which may provide a high level of water storage and support water supply and/or river base flow on a strategic scale. A hydrogeological impact assessment was carried out by Atkins. A 'low significance' effect was predicted on the principal aquifer. During operation, de-watering and diversion of groundwater from the aquifer, and a decrease in water quality due to

SA Objective and Sub Questions	SA Score	Justification
		chemicals used during quarrying. Any alteration to the quality or lowering of the groundwater table has the potential to impact on any nearby private abstractions. After restoration, refilling with inert fill could contaminate the aquifer, and create a reduction in groundwater flow and storage. Any alteration to the quality or lowering of the groundwater table could impact on any nearby private abstractions. A minor negative effect is therefore predicted on this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 02 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Cinderford Brook Source to Blackpool Brook, Dry Brook, Bailey Brook, Lodgegrove Brook, and quarry lagoons at the existing Drybrook quarry. The underlying geology, which has been classified as a Principal aquifer will also need to be analysed.
17. 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	-?	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. However, this is uncertain as the GCC assessment notes that as the site would be an extension to the existing quarry it might provide an opportunity for a new highway access, which would enable lorries to reach the strategic road network with less impact on Drybrook. This may reduce impacts on this objective as lorry traffic may be reduced on local roads. The detailed development requirement for Allocation 02 in Appendix 6 of the Draft MLP specifies that the access for the existing Drybrook Quarry should be utilised. This is in preference to creating a new vehicular access for the purpose of the Preferred Area. A Transport Assessment may be necessary if an extension of time is required to use existing site infrastructure.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 03 – Preferred Area at Stowfield (Previously CRFD3 Stowefield Parcel C)

SA Objective and Sub Questions	SA Score	Justification
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 site is not within 100m of any sensitive receptors. The closest sensitive receptor is Scowles Caravan Park located approximately 300m to the southeast of the site boundary, while the closest settlement, which is the village of Scowles, is located over 300m to the southeast of the site. Therefore, the site is expected to have no effects on the health of local residents and communities. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	The site is not within 100m of any sensitive receptors. The closest sensitive receptor is Scowles Caravan Park located approximately 300m to the southeast of the site boundary, while the closest settlement, which is the village of Scowles, is located over 300m to the southeast of the site. Therefore, the site is expected to have no effects on the amenity of local communities. The site is not within 100m of any areas allocated for new residential development in the Forest of Dean District Council Adopted Core Strategy or Submitted Allocations Plan, therefore there should not be any landuse conflict. The site is located within 1km of the settlement Staunton and Scowles and is proposed as a deepening to the existing Stowfield Quarry, therefore, continuing crushed rock extraction activity in this area could have a minor negative cumulative effect on the amenity of the local community due to the potential continued noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be more likely as the site would work crushed rock which would require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. The detailed development requirements for Allocation 03 in Appendix 6 of the Draft MLP

SA Objective and Sub Questions	SA Score	Justification
		specify the need for an analysis of potential amenity impacts will be necessary. Careful consideration should be paid to the local communities made up of the individual residential properties, farms and commercial enterprises located nearby to the Preferred Area and those that comprise the nearby hamlets and villages of Crossways, Scowles, Staunton and Newland.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The site is not within an aerodrome safeguarding area and is therefore not expected to have an effect on this 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.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The eastern boundary of the site is within 50m of Dingle Wood SSSI and the northern area of the site is located within Blakes Wood Key Wildlife Site. The western boundary of the site is also within 1km of Staunton Woods Key Wildlife Site. The southwest corner of the site is within approximately 1km of Wye Valley Woodlands SAC and Swanpool Wood & Furnace Grove SSSI. The 2016 HRA Report states that "Allocation 3: Preferred Area at Stowfield comprises of parcel C (CRFD3) previously considered at the Site Options stage of the draft MLP. This parcel of land is proposed for deepening of an existing quarry bottom. This is largely a working quarry already, and roosting or

SA Objective and Sub Questions	SA Score	Justification
		foraging or commuting features for bats would not be lost. This allocation can be safely screened out from appropriate assessment because clearly there could not be a likely significant effect on bats associated with the Wye Valley Woodlands or Wye Valley & Forest of Dean SACs." The 2014 GCC site assessment noted that this site is made up of the proposed additional site deepening and the existing consented quarry. There are already mitigation measures in place and a S106 fund has been secured to benefit the Wye Woods 1 SNA and a range of notable species in surrounding local areas nearby. The quarry is to be restored by a mixture of minimal landscaping and natural re-colonisation processes. Subject to the observations of statutory advisors a significant effect on Wye Valley Woodlands Sites SAC, Dingle Wood SSSI and Swanpool Wood & Furnace Grove SSSI is unlikely but any new/revised development upon this land should still be assessed for such impacts at the planning application stage. Therefore, the site could have some minor negative effects in the short term, although mitigation would be possible, and minor positive effects in the long-term could be achieved through restoration, however, these effects are uncertain as they will depend on the specific proposals put forward at the planning application stage. The detailed development requirements for Allocation 03 in Appendix 6 of the Draft MLP specify the need for an assessment of the natural environment surrounding the Preferred Area and an analysis of whether any significant effects on the Wye Valley Woodlands Sites SAC either alone or in combination with other plans or projects, are likely to arise must also be carried out through formal screening to establish the need for an Appropriate Assessment (AA).
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The site is within the Wye Valley AONB. However, the landscape assessment carried out by Atkins (June 2015) judged that there will not be any significant impacts on the landscape character of the area. It concludes that while some significant landscape and visual impacts have been identified, they are derived solely from the previous proposal within Parcel A (which is not within the Preferred Area); there are no significant impacts as a result of the proposal at Parcel C. Therefore, a negligible effect is identified for this objective. The detailed development requirements for Allocation 03 in Appendix 6 of the Draft MLP specify the need for a Landscape & Visual Impact Assessment, which must acknowledge the wider Wye Valley AONB designation that the Preferred Area is located within. This should be achieved by analysing the sensitivity of national landscape

SA Objective and Sub Questions	SA Score	Justification
		character NCA 105 (Forest of Dean and Lower Wye) and the regional / local level classification – The Limestone Hills landscape character type and the Highmeadow Woods and Staunton Hills landscape character area, which are both described in the Forest of Dean Landscape Character Assessment. In addition, the presence of the Preferred Area within the Wye Valley AONB's Landscape Management Zone 10 – Dean Edge Limestone Hills should also be taken into account.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The PRoW footpath RST/18/1 is within 150m of the western boundary of the site, however, the GCC PRoW Team has identified that no effects are expected on PRoW. The existing PRoW also runs past the existing consented quarry which is an established site, and therefore it is unlikely that deepening of the quarry will further impact on recreation assets or recreational activities. Furthermore, the GCC PRoW Team state that mineral developments could well offer opportunity of enhancement but at this stage and without checking on the ground or consulting the parishes it is too early to be exact. Therefore, the site is not expected to have an effect on recreation assets or recreational activities.
11. To protect conserve and enhance geodiversity in Gloucestershire.	--?	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is located within the existing consented Stowfield Quarry which is designated as a Regionally Important Geological Site local site and could therefore have a significant negative effect on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. However, the GCC assessment recommends that if quarrying is extended, or any infilling takes place, one rock face along the complete E-W section of the existing consented quarry is preserved,

SA Objective and Sub Questions	SA Score	Justification
		with an access ramp or path along it.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	The Scowles located north of Blake's Wood and located in Blake's Wood, which are Scheduled Ancient Monuments, are located within 100m of the northern and eastern boundary of the site. There are also Scowles (registered as Scheduled Ancient Monuments) located in Dingle Wood approximately 50m to the east of the site. Additionally the northern boundary of the site is within 500m of Staunton Conservation Area and the listed buildings located within it, the closest being Church Farmhouse (Grade II) located approximately 780m away. However, the landscape assessment carried out by Atkins (June 2015) judged that there will not be any significant impacts on the historic landscape character of the area, or the Scheduled Monuments. It concludes that while some significant landscape and visual impacts have been identified, they are derived solely from the previous proposal within Parcel A (which is not within the Preferred Area); there are no significant impacts as a result of the proposal at Parcel C. Therefore, the site may have a minor negative effect on the historic environment, however the effects would be uncertain as a more detailed assessment would be required once proposals are known. The GCC assessment notes that advice on planning applications for the existing quarry has covered the protection of the Scowles, and the recording of other archaeological features across the site. Also, that no further archaeological mitigation is required as this has already been undertaken within the existing quarry.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required and discharge of this water may give rise to an increased risk of flooding if the capacity of the receiving stream is exceeded. Any stockpiling of materials within areas susceptible to surface water flooding may increase the risk of flooding off site due to a reduction in water storage. In addition, after restoration, the backfilling of the mineral working with lower permeability material is likely to increase the amount of runoff from the site following a rainfall event and may therefore increase the risk of flooding. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore predicted for this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures

SA Objective and Sub Questions	SA Score	Justification
		proposed. The detailed development requirements for Allocation 03 in Appendix 6 of the Draft MLP specify the need for a flood risk assessment, which affords attention to the possibility of elevated risks associated with groundwater flooding and increased surface water run-off. Potential sensitive receptors surrounding the site should be investigated.
14. To protect and enhance soil / land quality in Gloucestershire.	0	The site is not within Grade 1, 2 or 3 agricultural land and is therefore not expected to have an effect on protecting or enhancing soil/land quality. Furthermore, the GCC assessment notes that as the land lies within the current permitted boundary of the existing quarry, the soil and overburden has already been considered under the extant planning consent.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The site is within 300m of the A4136 but is not within 1km of an AQMA; therefore the site is expected to have a negligible impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage. Although, the GCC assessment states that a potential depth extension would be considered using the existing access and infrastructure and should therefore not breach the current productive capacity.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	A hydrogeological impact assessment carried out by Atkins outlines the impacts on nearby receptors. Impacts on the principal aquifer are of low significance which includes the dewatering and diversion of groundwater from this area of the aquifer and the decrease in water quality. During operation, de-watering activities from quarrying is likely to result in a decrease of water levels in the aquifer surrounding any quarrying activities. This reduction in levels is likely to impact on any abstractions within the aquifer in close proximity to the quarry. Pollution of the aquifer from chemicals used during quarrying may decrease water quality in the aquifer. The aquifer is small and hydraulically isolated from surrounding aquifers by low permeability units. Any alteration to the quality or lowering of the groundwater table due to de-watering will only impact locally and will not impact upon nearby potable supplies. Blake's Wood KWS has a low significance impacts in relation to the changes in groundwater levels and/or quality can impact sensitive vegetation and have knock-on impacts of faunal interest. During and after restoration, an adverse impact is likely due to the close proximity of the site the KWS. In addition, Dingle Wood SSSI also has low significance impacts in relation to the changes to water availability and discharge of polluted water.

SA Objective and Sub Questions	SA Score	Justification
		During operation and after restoration, as a designated SSSI any potential change in hydrological conditions could potentially impact on integrity of the site and he SSSI is not known to be water-dependent, however it is within close proximity of the site so there is potential for adverse impact. Therefore, overall a minor negative effect is identified, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 03 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the nearby surface water bodies up to 1km. A review of the underlying geology should also be carried out to identify the presence of a designated aquifer.
17. 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	+?	This site is within 300m of the A4136 and the GCC assessment states that a potential depth extension would be considered using the existing access and infrastructure and should therefore not breach the current productive capacity. Therefore the site is likely to have a minor positive effect on reducing the impacts of lorry traffic on the environment and communities as traffic associated with the site should not have to travel far on local roads. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 04 – Preferred Area at Daglingworth (Previously CRCW1 Daglingworth Parcel A)

SA Objective and Sub Questions	SA Score	Justification
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 site is not within 100m of any sensitive receptors. The closest sensitive receptor is Oysterwell House located approximately 250m north east of the site. The closest settlement Itlay, is located approximately 500m to the south. Therefore, the site is expected to have no effects on the health of local residents and communities. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	The site is not within 100m of any sensitive receptors. The closest sensitive receptor is Oysterwell House located approximately 250m north east of the site. The closest settlement Itlay, is located approximately 500m to the south. Therefore, the site is expected to have no effects on the amenity of local communities. The site is not within 100m of any allocated residential sites in the Regulation 19 Cotswold District Local Plan (June 2016). The site is located within 1km of the settlements Itlay and Bagendon and is proposed as an extension area to the existing Daglingworth Quarry, therefore, continuing crushed rock extraction activity in this area could have a minor negative cumulative effect on the amenity of the local community due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be more likely as the site would work crushed rock which would require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. The detailed development requirements for Allocation 04 in Appendix 6 of the Draft MLP specify the need for an analysis of potential amenity impacts will be necessary. Careful

SA Objective and Sub Questions	SA Score	Justification
		consideration should be paid to the local communities that comprise the individual residential properties, farms and commercial enterprises located nearby to the Preferred Area and those which form the hamlets of Itlay and Upper End near to Bagendon.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The site is not within an aerodrome safeguarding area and is therefore not expected to have an effect on this 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.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	High Tun Farm KWS, Itlay KWS, and Stancombe Grove & Oysterwell Wood KWS are within 250m of the site. There are also other Key Wildlife Sites within 1km of the site, such as Bagendon Grove & Oysterwell Wood KWS, Merchants Downs KWS, and Daglingworth & Snakes Groves KWS. However, the GCC site assessment 2016 notes that priority habitats plus protected and/or priority species have been recorded adjacent and within 1km of the land and that any development upon this land should be assessed for impacts on internationally and nationally designated sites. The 2016 HRA Report states that "Allocation 4: Preferred Area at Daglingworth comprises of parcel A (CRCW1) previously considered at the Site Options stage of the

SA Objective and Sub Questions	SA Score	Justification
		draft MLP. This parcel was deemed to be very distant and with no pathway present related to minerals development that would result in any conceivable effect on the conservation objectives of any European Site. Allocation 4: Preferred Area at Daglingworth can therefore be safely screened out [from Appropriate Assessment]." Therefore, extraction at this site is likely to affect biodiversity generally, but the GCC site assessment 2016 highlights there is also potential for biodiversity enhancement through developing the site, so a mixed minor negative and positive, uncertain effect is identified.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The site is located within the Cotswolds AONB. The landscape assessment carried out by Atkins (June 2015) judged that there would be not be any significant impacts on the landscape character or features of the area. This is due to the lack of designated features within or around the site and the location of the site adjacent to an existing quarry. The Atkins report also judged that there would not be any significant impacts on the visual resource of the area. Therefore, a negligible effect is identified for this objective. However, the detailed development requirements within Appendix 6 of the Draft MLP state that a Landscape and Visual Impact Assessment will be necessary, which must acknowledge the wider Cotswold AONB designation that the Preferred Area is located within.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The PRoW bridleway BDH 3/2 runs along the south eastern boundary of the site. The GCC site assessment 2016 identifies that this bridleway would have to be diverted, although the GCCsite assessment 2016 criteria anticipated the PRoW remaining due to use of a tunnel to access the preferred area. Furthermore, GCC PRoW Team state that mineral developments could well offer opportunity of enhancement but at this stage and without checking on the ground or consulting the parishes it is too early to be exact. Therefore, the site could have minor negative effects on recreation activities as the PRoW might be out of use while diverted, and minerals extraction at the site could make nearby recreational assets less attractive for users.

SA Objective and Sub Questions	SA Score	Justification
		The detailed development requirements for Allocation 04 in Appendix 6 of the Draft MLP specify the need for an assessment of the PRoW network should be undertaken with particular attention given to paths BDH 3/2 and 10/1. Advice should be sought from the Local Highways Authority regarding any proposals to temporarily divert or permanent re-routing either of the potentially affected paths.
11. To protect conserve and enhance geodiversity in Gloucestershire.	-?	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is located within 500m of Daglingworth Quarry Regionally Important Geological Site. Therefore, the site could have a minor negative effect on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The latest GCC site assessment 2016 calls for advice to be sought on geodiversity before the site is developed which would emulate what is already occurring on the adjacent site. The detailed development requirements for Allocation 04 in Appendix 6 of the Draft MLP specify the need for an assessment of potential impacts on Daglingworth Quarry RIGS no. 165 should be carried out, which incorporates possible mitigation measures, if required. Advice should be sought in this regard from the Gloucestershire Geology Trust.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	--?	The eastern boundary of the site is within 1km of Bagendon Conservation Area and Bagendon House Listed Building (Grade II) which is located within it. Additionally Duntisbourne Rouse/Middle Conservation Area and Daglingworth Conservation Area, and some listed buildings located within them are located just within 1km of the west and south west of the site respectively. However, the Atkins landscape assessment concluded that the sensitivity of the historic landscape character in relation to the proposed development was judged to be low and that the significance of effect on this receptor would be Negligible. In addition, it was judged that the proposed development would have no further landscape or setting impacts upon other landscape and heritage features within the area. Therefore a negligible effect is identified for heritage assets and their setting. However, the GCC site assessment 2016 identifies the site of a possible Bronze Age

SA Objective and Sub Questions	SA Score	Justification
		barrow, and an earthwork bordering the south eastern boundary of the site which forms a part of the late Iron Age-early Roman settlement of Bagendon. The latter is of national importance and parts of the complex are a scheduled monument. The possible presence of other features contemporary with Bagendon was raised. It was recommended that the linear earthwork was excluded from the extraction area, and that the rest of the site should be assessed/evaluated. Therefore, the site could have a significant negative effect on archaeology, however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. The detailed development requirements for Allocation 04 in Appendix 6 of the Draft MLP specify the need for an assessment of heritage assets for the Preferred Area that incorporates an analysis of its potential archaeological interest. This must include both a pre-determination evaluation to establish the presence and significance of heritage assets; and a mitigation strategy that could introduce constraints upon future mineral working and associated activities in order to preserve key heritage assets and their settings; and the appropriate and proportionate recording and / or excavation of all other heritage assets.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	The hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After restoration, it is likely that surface pooling on site will increase if impermeable material is used. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upgradient of the site. This could give rise to an increased risk of groundwater flooding locally. However the Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. . The detailed development requirements for Allocation 04 in Appendix 6 of the Draft MLP specify the need for a flood risk assessment, which affords attention to the possibility of elevated risks associated with groundwater flooding and increased surface water run-off. Potential sensitive receptors surrounding the site should be investigated.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a medium area (17ha) and is within grade 3 agricultural land and could

SA Objective and Sub Questions	SA Score	Justification
		therefore have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. The detailed development requirements for Allocation 04 in Appendix 6 of the Draft MLP specify the need for a soil impact assessment should be undertaken, which identifies potential impacts and possible mitigation, if required, particularly in light of the presence of agricultural land of BMVAL quality grade 3b.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The site is adjacent to the A417 but is not within 1km of an AQMA; therefore the site is expected to have a negligible impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	A hydrogeological impact assessment was carried out by Atkins. A significant effect was predicted on the principal aquifer and Abstraction and SPZ1. In relation to the principal aquifer, de-watering and diversion of groundwater from this area of the aquifer, and a decrease in water quality is predicted. After restoration, backfilling of the quarry with impermeable material may decrease the supply recharge of water, possibly reducing the water level. In relation to Abstraction and SPZ1, during operation, dewatering activities may decrease the water levels within SPZ1, with chemicals lowering water quality. After restoration, backfilling of the quarry with impermeable material may decrease the supply recharge of water, possibly reducing the water level. However, the Atkins report does state that dewatering may not be required. A minor negative effect is predicted for this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 04 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the nearby surface water bodies up to 1km. A review of the underlying geology should also be carried out to identify the presence of a designated aquifer.
17. To reduce the adverse impacts of lorry traffic on the environment and communities through means such as:	+?	This site is adjacent to the A417 and could therefore have a minor positive effect on reducing the impacts of lorry traffic on the environment and communities, as traffic associated with the site should not have to travel far on local roads. Furthermore, the

SA Objective and Sub Questions	SA Score	Justification
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		GCC assessment notes that the A417 was the preferred route for lorry traffic, and that it is anticipated that the site would only have potential as an extension to the existing site at Daglingworth using the current access. This may help reduce impacts of lorry traffic on the environment and communities. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 05 – Preferred Area at Huntsmans (part of previous CRCW2 Huntsmans Parcel A)

SA Objective and Sub Questions	SA Score	Justification
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 site is not within 100m of any sensitive receptors. The closest sensitive receptor is Nosehill Farm located approximately 310m to the east of the site. The nearest settlement is Barton, located over 1km to the west of the site. Therefore, the site is expected to have no effects on the health of local residents and communities. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0	The site is not within 100m of any sensitive receptors. The closest sensitive receptor is Nosehill Farm located approximately 300m to the east of the site. The nearest settlement is Barton, located over 1km to the west of the site. Therefore, the site is expected to no effects on the amenity of local communities. There are no residential sites allocated for development within 100m of the site as part of the Regulation 19 Cotswold District Local Plan (June 2016). Furthermore, as the site is adjacent to an existing mineral site but is over 100m from sensitive receptors, and over 1km from the nearest settlements it is not expected to have a cumulative effect on the local community. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP specify the need for an analysis of potential amenity impacts. This should help provide mitigation for the potential negative effects identified. The Draft MLP also specifies the possible need for a transport assessment, also stating that the existing access route at Huntsman's Quarry should be utilised rather than a new, separate vehicular access.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire

SA Objective and Sub Questions	SA Score	Justification
		economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The site is not within an aerodrome safeguarding area and is therefore not expected to have an effect on this 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.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+	The western boundary of the site is within 400m of Barton Bushes SSSI. The site is also located within 1km Barton Valley Key Wildlife Site. However, the GCC site assessment notes that impacts on the nearby SSSIs are unlikely, and there is the potential for this site to provide some biodiversity enhancement tying into the surrounding restoration scheme for the recently consented Tinkers Barn Extension, which over half of this arable/pasture site is within. Mitigation measures for protected species have been agreed as has a biodiversity strategy to include translocation and creation of calcareous grassland (2ha) which will occur next to Barton Bushes SSSI and contribute to the adjacent Barton SNA. New hedgerows are also planned. Overall, the GCC site assessment considers the impact on biodiversity could be potentially neutral or positive, therefore, a minor positive effect is expected on this objective. In addition, the 2016 HRA Report states "Allocation 5: Preferred Area at Huntsman's comprises of parcels A (west CRCW2) and C (south CRCW2) previously considered at the Site Options stage of the draft MLP. The closest European Site is Dixton Wood SAC at around 14km away and no pathway is present from minerals development occurring at Huntsman's that would result in a conceivable effect on conservation objectives of the European Site. Allocation 5: Preferred Area at Huntsman's can therefore be safely screened out [from Appropriate Assessment]." The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP specify the need for an analysis of potential impacts on the natural environment in regards to Huntsman's Quarry SSSI, Barton Bushes SSSI, Warren Beds KWS and Barton Vale KWS. The analysis will also need to investigate impacts on priority habitats and species which have been identified within 1km of the site. An analysis of any possible significant effects on internationally and nationally designated sites which may

SA Objective and Sub Questions	SA Score	Justification
		arise is also to be incorporated into the assessment, along with the need for the exploration of biodiversity enhancements, all of which should help provide mitigation for the potential negative effects identified.
8. To protect, conserve and enhance the landscape in Gloucestershire.	-?	The site is located within the Cotswolds AONB. However, t6he landscape assessment carried out by Atkins (June 2015) judged that there will not be any significant impacts on the wider landscape character of the area. Therefore, a minor negative effect is identified for this objective. However, uncertainty is attached, as a more detailed assessment would be required once specific proposals and mitigation measures are known. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged that there would be significant Moderate Adverse visual impacts on the campsite and Wildlife Walk from Cotswold Farm Park due to workings within Parcel A. It may be possible to mitigate some of these impacts through careful design of Parcel boundaries and mitigation planting. According to the Atkins report, there would be significant Moderate Adverse impact on the historic landscape character of the area. These effects could be mitigated in the long term through restoration to previous land use following completion of mineral workings. The detailed development requirement for Allocation 05 in Appendix 6 of the Draft MLP specifies the need for a Landscape & Visual Impact Assessment, which must acknowledge the wider Cotswold AONB designation that the Preferred Area is located within. This should be achieved by analysing the sensitivity of national landscape character NCA 107 (Cotswolds) and that of the regional / local level classification – The High Wold landscape character type and area. Consideration should also be given to potential visual impacts on nearby sensitive receptors that may include a number of individual properties, farms and agricultural premises and numerous recreational paths and routes present in the locality.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP outlines the need to investigate opportunities for biodiversity enhancements, such as the creation a series of ditch structures and hedge and tree lines; and facilitating species rich, rough grassland alongside more traditional agriculture.

SA Objective and Sub Questions	SA Score	Justification
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	0	The PRoW footpath HTG/28/1 is located within 500m of the north boundary of the site. A negligible effect is therefore predicted on this SA objective.
11. To protect conserve and enhance geodiversity in Gloucestershire.	-?	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is more than 500m from any Regionally Important Geological Site but the eastern boundary of the site is within 400m of Huntsman's Quarry SSSI (a national site of geological interest). Therefore, the site could have a minor negative effect on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP outline the need for a geodiversity analysis, with acknowledgement of Cotswold Slates. Consideration must also be given to the conservation of geodiversity from the Gloucestershire Geology Trust.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	The site has a Bowl Barrow designated as a Scheduled Monument just under 100m of the eastern boundary of the site, and a further six Bowl Barrows (part of the Bemborough Farm round barrow cemetery) approximately 400m to the north west. The Atkins landscape assessment (June 2015) judged that the sensitivity of the Bowl Barrows Scheduled Monuments within and around Parcel A to the proposed development is High. The workings with Parcel A would retain the Bowl Barrow within the Parcel but there would be a major alteration to setting of the feature resulting in a High magnitude of change. Overall, the Atkins report judged that the significance of effect on this receptor would be Major Adverse. However, the Atkins assessment was based on the previous larger boundary for Parcel A. The allocated Preferred Area does not include any of the Bowl Barrow Scheduled Monuments. The Summerhill prehistoric site which is designated as a Scheduled Monument is located within 1km of the southern boundary. Furthermore the 2016 GCC assessment notes that the site is situated within a landscape with a high density of archaeological sites of prehistoric and Roman date, some of which are designated as scheduled monuments. Therefore, the

SA Objective and Sub Questions	SA Score	Justification
		site could have a minor negative effect on the setting of these assets, however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. An assessment of heritage assets is required in the detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP. This will be an analysis of the area's potential archaeological interest with a mitigation strategy which could introduce constraints on future mineral working. This will help to preserve key heritage assets and their settings.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	The hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Additionally, stockpiling of materials within areas susceptible to flooding may increase the risk of flooding due to reduction in flood plain storage. After restoration, it is likely that surface pooling on site will increase if impermeable material is used. With the use of lower permeability materials, rainwater events may increase risk of flooding. Lower permeability materials used in backfilling may block the migration of groundwater through the site, causing water levels to rise upstream. A minor negative effect is therefore predicted for this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP specifies the need for a flood risk assessment, focused on the possibility of elevated risks from groundwater flooding and increased surface water run-off. Potential sensitive receptors include Summerhill Farm (to the south) and the offices of the existing Huntsman's Quarry.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a small area (8.7ha) and is within grade 3 agricultural land and could therefore have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. A soil impact assessment is outlined in the detailed development requirements for

SA Objective and Sub Questions	SA Score	Justification
		Allocation 05 in Appendix 6 of the Draft MLP due to the presence of agricultural land of BMVAL qualities 3a.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA but is more than 1km from the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The Atkins hydrogeological impact assessment found a low significance effect on Barton Bushes SSSI, in relation to changes to water availability and discharge of polluted water. The principal aquifer has a highly significant effect predicted. During operation, there may be a large de-watering process during quarrying and an impact on groundwater flow paths as it stretches across flow of groundwater. Chemicals used in the process mat also enter the aquifer, reducing water quality. After restoration, replacement of sand with lower permeability may cause perturbation of the groundwater regime, which will have negative effects on local private potable abstractions and contaminate the aquifer. A minor negative effect is therefore predicted for this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 05 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km – 3km): River Windrush, River Eye, several springs feeding an unnamed tributary of the Windrush; and small ponds and a small lake that relate the existing Huntsman's Quarry. The Preferred Area is also located less than 1km of a Source Protection Zone Level 3 and the underlying geology, which has been classified as a Principal aquifer will also need to be analysed.
17. 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	-	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. The detailed development requirement for Allocation 05 in Appendix 6 of the Draft MLP specifies the need for a transport assessment, also stating that the existing access

SA Objective and Sub Questions	SA Score	Justification
c) sensitive lorry routing d) the use of sustainable alternative fuels		route at Huntsman's Quarry should be utilised rather than a new, separate vehicular access.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 05 – Preferred Area at Huntsmans (Previously CRCW2 Huntsmans Parcel C)

SA Objective and Sub Questions	SA Score	Justification
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 south east corner of the site is within 100m of Huntsmans House and Huntsmans Cottage. The nearest settlement is Barton, located over 1km away to the west of the site. Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have a negative effect on the health of local residents and communities within close proximity to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site, Huntsmans House and Huntsmans Cottage in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	The south east corner of the site is within 100m of Huntsmans House and Huntsmans Cottage. The nearest settlement is Barton, located over 1km away to the west of the site. Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be more likely as the site would work crushed rock which would require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. There are no residential sites allocated for development within 100m of the site as part of the Regulation 19 Cotswold District Local Plan (June 2016). There are no settlements within 1km of the site and therefore the site is not expected to have a cumulative effect on the amenity of the local community. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP specify the need for an analysis of potential amenity impacts. This should help provide mitigation for the potential negative effects identified. The Draft MLP also specifies the

SA Objective and Sub Questions	SA Score	Justification
		possible need for a transport assessment, also stating that the existing access route at Huntsman's Quarry should be utilised rather than a new, separate vehicular access.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The site is not within an aerodrome safeguarding area and is therefore not expected to have an effect on this 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.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+?	The 2016 HRA Report states "Allocation 5: Preferred Area at Huntsman's comprises of parcels A (west CRCW2) and C (south CRCW2) previously considered at the Site Options stage of the draft MLP. The closest European Site is Dixton Wood SAC at around 14km away and no pathway is present from minerals development occurring at Huntsman's that would result in a conceivable effect on conservation objectives of the European Site. Allocation 5: Preferred Area at Huntsman's can therefore be safely screened out [from Appropriate Assessment]." The GCC site assessment 2016 notes observes that the site is a large open area of mainly arable land with defunct hedgerows and that no confirmed notable species are recorded on site, but there are nationally designated sites are nearby plus locally designated sites and priority habitats plus protected and/or priority species have been recorded within 1km of the land. The northern boundary of the site is within 800m of

SA Objective and Sub Questions	SA Score	Justification
		Barton Bushes SSSI and the site is also located within 1km of two Key Wildlife Sites: Warren Beds; and Barton Valley. As the site is adjacent to Brockhill B SNA, a useful contribution could be made through a restoration scheme including calcareous grassland creation. Therefore, the GCC site assessment 2016 considers the overall impact on biodiversity is potentially uncertain or positive, and a minor positive effect is predicted for this objective. However, these effects would be uncertain as they will depend on the exact nature and design of new sites, which would not be known until the planning application stage. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP specify the need for an analysis of potential impacts on the natural environment in regards to Huntsman's Quarry SSSI, Barton Bushes SSSI, Warren Beds KWS and Barton Vale KWS. The analysis will also need to investigate impacts on priority habitats and species which have been identified within 1km of the site. An analysis of any possible significant effects on internationally and nationally designated sites which may arise is also to be incorporated into the assessment, along with the need for the exploration of biodiversity enhancements, all of which should help provide mitigation for the potential negative effects identified.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The site is located within the Cotswolds AONB. However, the landscape assessment carried out by Atkins (June 2015) judged that whilst some significant landscape and visual impacts have been identified, they are concentrated in close proximity to the site or within the boundary of the site itself. The significant impacts are derived from the proposals within Parcel A and B; there are no significant impacts as a result of the proposal at Parcel C (which is what this Allocation comprises). Therefore, a negligible effect is identified for this objective. The detailed development requirement for Allocation 05 in Appendix 6 of the Draft MLP specifies the need for a Landscape & Visual Impact Assessment will be necessary, which must acknowledge the wider Cotswold AONB designation that the Preferred Area is located within. This should be achieved by analysing the sensitivity of national landscape character NCA 107 (Cotswolds) and that of the regional / local level classification – The High Wold landscape character type and area. Consideration should also be given to potential visual impacts on nearby sensitive receptors that may include a number of individual properties, farms and agricultural premises and numerous recreational paths and routes present in the locality.

SA Objective and Sub Questions	SA Score	Justification
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-?	The PRoW footpath HNA/19/1 appears to run along the eastern boundary of the site and could therefore have a minor negative effect on recreation activities by making the footpath less attractive for users. However, the 2016 GCC site assessment notes that no PRoWs would be affected, therefore this effect is uncertain.
11. To protect conserve and enhance geodiversity in Gloucestershire.	-?	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The north boundary of the site is within 500m of Huntsman's Quarry SSSI (a national site of geological interest) and the southern boundary is within 500m of Grange Hill Quarry Regionally Important Geological Site. Therefore, the site could have a minor negative effect on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP outline the need for a geodiversity analysis, with acknowledgement of Cotswold Slates. Consideration must also be given to the conservation of geodiversity from the Gloucestershire Geology Trust.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	The southern boundary is within 200m of Summerhill prehistoric site which is designated as a Scheduled Monument. The south east corner of the site is also within 500m of Bowl barrow known as 'Salter's Pool round barrow', which is designated as a Scheduled Monument. However, the Atkins landscape assessment, which assessed impacts on historic landscape character and local designated heritage assets judged that while there could be some significant impacts on the Bowl Barrow Scheduled Monuments, they are the ones to the north of the previous Parcel A and there are no significant impacts as a result of the proposal at Parcel C. In addition, the Atkins assessment notes the sensitivity of the Sumerhill prehistoric site Scheduled Monument

SA Objective and Sub Questions	SA Score	Justification
		south of Parcel C to the proposed development is judged to be High. There would be a very minor alteration to the setting resulting in a Negligible magnitude of change. Overall it has been determined that the significance of effect on this receptor would be Negligible. The GCC site assessment 2016 notes that only a limited evaluation round the periphery of this area identified undated archaeological features and some Roman finds and the site is situated in within a landscape with a high density of archaeological sites of prehistoric and Roman date, some of which are designated as scheduled monuments. Therefore, the site could have a minor negative effect on the setting of these assets, however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP outline the need for an assessment of heritage assets for the Preferred Areas that incorporates an analysis of its potential archaeological interest, particularly the presence of several Scheduled Ancient Monuments nearby.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Additionally, stockpiling of materials within areas susceptible to flooding may increase the risk of flooding due to reduction in flood plain storage. After restoration, it is likely that surface pooling on site will increase if impermeable material is used. With the use of lower permeability materials, rainwater events may increase risk of flooding. Lower permeability materials used in backfilling may block the migration of groundwater through the site, causing water levels to rise upstream. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore predicted for this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP outlines the need for a flood risk assessment, focused on the possibility of elevated risks from groundwater flooding and increased surface water run-off. Potential sensitive receptors include Summerhill Farm (to the south) and the offices of the

SA Objective and Sub Questions	SA Score	Justification
		existing Huntsman's Quarry.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a large area (39ha) and is within grade 3 agricultural land and could therefore have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. A soil impact assessment is outlined in the detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP due to the presence of agricultural land of BMVAL qualities 3a.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA but is more than 1km from the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The site is not within a source protection zone but does overlay a principal aquifer which may provide a high level of water storage and support water supply and/or river base flow on a strategic scale. A hydrogeological impact assessment found a low significance effect on Barton Bushes SSSI, in relation to changes to water availability and discharge of polluted water. The principal aquifer has a highly significant effect predicted. During operation, there may be a large de-watering process during quarrying and an impact on groundwater flow paths as it stretches across flow of groundwater. Chemicals used in the process may also enter the aquifer, reducing water quality. After restoration, replacement of sand with lower permeability may cause perturbation of the groundwater regime, which will have negative effects on local private potable abstractions and contaminate the aquifer. A minor negative effect is therefore predicted for this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 05 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km – 3km): River Windrush, River Eye, several springs feeding an unnamed tributary of the Windrush; and small ponds

SA Objective and Sub Questions	SA Score	Justification
		and a small lake that relate the existing Huntsman's Quarry. The Preferred Area is also located less than 1km of a Source Protection Zone Level 3 and the underlying geology, which has been classified as a Principal aquifer will also need to be analysed.
17. 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	-	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. The detailed development requirements for Allocation 05 in Appendix 6 of the Draft MLP specifies the possible need for a transport assessment, also stating that the existing access route at Huntsman's Quarry should be utilised rather than a new, separate vehicular access.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 06 - Specific Site at Manor Farm, Kempsford (Previously SGCW4 Kempsford/Whelford Parcel C)

SA Objective	SA Score	Justification
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 site is not within 100m of any sensitive receptors. The closest sensitive receptors are located in the settlement of Whelford to the north, where the nearest property is Queens Cottage, located 160m to the north. Therefore, the site is expected to have no effects on the health of local residents and communities. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	The site is not within 100m of any sensitive receptors. The closest sensitive receptors are located in the settlement of Whelford to the north, where the nearest property is Queens Cottage, located 160m to the north. Therefore, the site is expected to have no effects on the amenity of local communities. There are no residential sites allocated for development within 100m of the site as part of the Regulation 19 Cotswold District Local Plan (June 2016). However, as the site is within 1km of the settlement of Whelford, which is also within 1km of existing mineral sites (Kempsford/Manor Farm and Claydon Pike/Coln/Thornhill Farm), continuing sand and gravel extraction activity in this area could have a cumulative effect on the amenity of the local community. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts, with consideration given to the local communities of Kempsford and Whelford. This should help provide mitigation for the potential negative effects identified. The Draft MLP also specifies the possible need for a transport assessment, also stating that the existing access route at Manor Farm should be utilised, rather than a new, separate vehicular access.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites likely to be developed in

SA Objective	SA Score	Justification
		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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The GCC assessment notes that the entire site lies within the safeguarding zone for RAF Fairford, and partially within the safeguarding zone for RAF Brize Norton. Therefore, the site could have a minor negative effect on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as this site may be restored to a form of open water use as it is located close to the Cotswold Water Park. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, the site may be restored to a dry after use due to being located within the RAF Fairford safeguarding zone; however, this could increase the risk of flooding as mentioned against SA Objective 13 below. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP outline the need for a full assessment of aviation safety, due to the proximity of the site to RAF Fairford and RAF Brize Norton.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard mineral resources from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The 2016 HRA Report states "Allocation 6: Specific Site at Manor Farm, Kempsford comprises of parcel C (SGCW4) previously considered at the Site Options stage of the draft MLP. The nearest European Site is North Meadow & Clattinger Farm SAC which is around 7km away (North Meadow) and given the position in the catchment it has already been deemed that minerals development at Manor Farm Kempsford would not result in any conceivable effect on conservation objectives of the SAC or any other European Site. Allocation 6: Specific Site at Manor Farm, Kempsford can therefore be safely screened out [from Appropriate Assessment]." The site is within 500m of the Cotswold Water Park SSSI, and is adjacent to Jenner's Farm Field Key Wildlife Site. The 2014 GCC site assessment noted that hedge and tree lines present across the site will need retaining as far as possible as they would have value for bats and hedgehog and potentially great crested newt. The Cotswold Water Park SSSI (& KWS) is not far away but although they are the other side of the River Coln they might be impacted hydrologically. However, this site could make a useful contribution towards the Coln Corridor SNA which overlaps the site. Restoration,

SA Objective	SA Score	Justification
		however, would have to take account of safeguarding aircraft using RAF Fairford, i.e. from the risk of bird strike. Therefore, a mixed minor negative and positive effect is predicted for this objective. This effect is uncertain as it will depend on the exact nature and design of new sites, which would not be known until the planning application stage. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP outlines the need to investigate opportunities for biodiversity enhancements, such as the creation a series of ditch structures and hedge and tree lines; and facilitating species rich, rough grassland alongside more traditional agriculture. Consideration must be given to RAF Fairford, due to increased risk of bird strike, as well as flood risk due to the location of the site on a flood zone.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The landscape assessment carried out by Atkins (June 2015) judged that there would be no significant landscape impacts on national and local landscape character or local features and designations. Therefore, a negligible effect is identified for this objective. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged significant Major Adverse visual impacts on Jenner's Farm, public footpaths BKD27, BKD28 and BKD34. These impacts arise as a direct result of workings within Parcels C (which is the Specific Site Allocation 06), D and E and the significance of these effects (with the exception of Jenner's Farm) could be reduced through careful design of specific mitigation measures. The proposed development would also result in significant Moderate Adverse impacts on the Whelford Road and residential properties within Whelford and Kempsford. These impacts arise as a direct result of workings within Parcels B, C and D and the significance of these effects could be reduced through careful design of specific mitigation measures. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP outline the need for a Landscape & Visual Impact Assessment, which will analyse the sensitivity of national landscape character NCA 108 (Upper Thames Clay Vales) and the regional / local level classification – River Basin Lowland landscape character type and the Fairford and Lechlade landscape character area, that are both described in the Various Vales (Gloucestershire) Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this

SA Objective	SA Score	Justification
the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.		would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP outlines the need to investigate opportunities for biodiversity enhancements, such as the creation a series of ditch structures and hedge and tree lines; and facilitating species rich, rough grassland alongside more traditional agriculture. Consideration must be given to RAF Fairford, due to increased risk of bird strike, as well as flood risk due to the location of the site on a flood zone.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	--?	The site includes the PRoW footpaths BKD 27/1, 28/1, 28/2, 34/1 and 34/2 that make a network through the centre of the site. The GCC PRoW Team has identified that a diversion would be required for these footpaths and that the area is sensitive in terms of rights of way due to the temporary closure of some paths to allow development of lakeside properties. In addition, the Atkins landscape assessment report also judged significant Major Adverse visual impacts on public footpaths BKD27, BKD28 and BKD34. These impacts arise as a direct result of workings within Parcels C (which is the Specific Site Allocation 06), D and E and the significance of these effects could be reduced through careful design of specific mitigation measures. Therefore, the site could have significant negative effects on recreation activities, as development of the site could mean temporarily closing additional existing PRoWs while they are diverted, adding to the sensitivity of the area. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP outlines the need for an assessment of the PRoW network, with particular focus on BKD 19/1, 19/2, 27/1, 28/1, 34/1, 34/2. Advice should also be sought from the Local Highways Authority regarding any proposals to temporarily divert or permanently re-route of any the potentially affected paths.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is not located within 500m of a Regionally Important Geological Site (the nearest RIGS is Barden Aggregates Pit, 660m south). Therefore, the site is not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	This site is located within 1km of six Grade II listed buildings, the nearest of which (Wayside Cottage) is located approximately 325m north. The landscape assessment carried out by Atkins (June 2015) judged that there will be a significant Moderate Adverse impact on the historic landscape character of the area. It may be possible to

SA Objective	SA Score	Justification
		mitigate this impact to some extent through retention of field boundaries and restoration of the site following completion of extraction. The Atkins report found that there would be no significant impacts on heritage features within the area. Therefore, the site could have a minor negative effect on historic landscape character; however, the effects would be uncertain as a more detailed assessment would be required once proposals and mitigation measures are known. Furthermore the GCC assessment notes that extensive undated field boundaries are recorded throughout this area, and have already been evaluated. A mitigation strategy (excavation) is required. An assessment of heritage assets is outlined in the detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP. This will be an analysis of the area's potential archaeological interest with a mitigation strategy which could introduce constraints on future mineral working. This will help to preserve key heritage assets and their settings.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After restoration, it is likely that surface pooling on site will increase if impermeable material is used. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP outlines the need for a flood risk assessment focused on the risk of river flooding, groundwater flooding and increased surface water run-off. Particular attention will also need to be given to the identification of Flood Zone area 2 over the site. Potential sensitive receptors that may be subject to flood risk and will therefore require scrutiny include the properties that comprise the village of Whelford and RAF Fairford.

SA Objective	SA Score	Justification
14. To protect and enhance soil / land quality in Gloucestershire.	--?	The site covers a large area (85.5ha) and is mostly within agricultural land classified as grade 2 or grade 3, and could therefore have a significant negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. A soil impact assessment is outlined in the detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP due to the presence of agricultural land of BMVAL qualities 3a and 3b.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA or the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The Atkins hydrogeological impact assessment found a low significance effect on Dudgrove Brook, regarding diversion of water away from the brook, an increase in volume of suspended solids into the brook and a decrease in water quality in the area. The secondary A aquifer has a significant effect predicted. During operation, there may be a large de-watering process during quarrying and an impact on groundwater flow paths as it stretches across flow of groundwater. Chemicals used in the process mat also enter the aquifer, reducing water quality. After restoration, replacement of sand with lower permeability may cause perturbation of the groundwater regime, inhibiting migration of groundwater to Dudgrove Brook and River Coln. A minor negative effect is therefore predicted for this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 06 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Dudgrove Brook and several of its local tributaries and network of drains; River Coln; Thames & Severn Canal; River Thames; Bowmoor Lake; Coln Park Lake; and a number of unnamed ponds concentrated to the north east of the Specific Site. The Specific Site is also located less than 1km of a Source Protection Zone Level 3 and the underlying geology has been classified as a Secondary Aquifer of High Vulnerability.
17. To reduce the adverse impacts of lorry traffic on the environment and	-?	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a

SA Objective	SA Score	Justification
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		minor negative effect on reducing the impacts of lorry traffic on the environment and communities. However, the GCC assessment notes that in recent years a second quarry (Stubbs Farm) was also operating out of Washpool Lane and movements were accommodated within the highways network. This quarry has since closed. Therefore, there is established access and infrastructure in place which could enable this site to be worked. This may help reduce the adverse impacts of lorry traffic on the environment and communities. However, this would be uncertain, as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 06 in Appendix 6 of the Draft MLP specify the possible need for a transport assessment, also stating that the existing access route at Manor Farm should be utilised, rather than a new, separate vehicular access.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 07: Preferred Area at Redpool's Farm, Twyning (Previously SGTW2 Redpools Farm Parcels A, B, C & D)

SA Objective and Sub Questions	SA Score	Justification
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 is a property located just within the northeastern boundary of the site (Fairfield), in addition to two further properties that are located within 100m of the site boundary (Far End and Church End Nurseries). The settlements Puckrup, Church End and Shuthonger are within 300m of the site, located to the north, east and south east respectively. Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have a negative effect on the health of local residents and communities within close proximity to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site, Far End, Puckrup, Church End and Shuthonger in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	There is a property located just within the northeastern boundary of the site (Fairfield), in addition to two further properties that are located within 100m of the site boundary (Far End and Church End Nurseries). The settlements Puckrup, Church End and Shuthonger are within 300m of the site, located to the north, east and south east respectively. Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be less likely at this site than a site for crushed rock as sand and gravel rarely require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. The site is not within 100m of any areas allocated for new residential development in the submitted version of the Gloucester, Cheltenham and Tewkesbury Joint Core Strategy (November 2014), therefore there should not be any landuse conflict. There are no other existing mineral sites also within 1km of nearby settlements; therefore the site is not expected to have a cumulative effect on the amenity of the

SA Objective and Sub Questions	SA Score	Justification
		local community. The GCC assessment notes that there is no highways history for any of this site. However, the applicant has suggested that access at the east onto the A38 could be used to access all resources, including land at Bow Farm (which the operator controls) in Worcestershire. It is believed that there is sufficient highways capacity but significant junction improvements would be required. This could lead to effects on the local community from lorry traffic, however, effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 07 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts, with consideration given to the local communities of Church End, Puckrup and Shuthonger. This should help provide mitigation for the potential negative effects identified. The detailed development requirements for the Draft MLP specify the need for a transport assessment, with advice from the Local Highways Authority, all of which should help provide mitigation for the potential negative effects identified.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	0	The site is not within an aerodrome safeguarding area and is therefore not expected to have an effect on this objective.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract

SA Objective and Sub Questions	SA Score	Justification
and other minerals sufficient for the needs of society.		resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The 2016 HRA Report states "Allocation 7: Preferred Area at Redpool's Farm, Twyning comprises of parcels A, B, C & D (SGTW2) previously considered at the Site Options stage of the draft MLP. The nearest European Site is Bredon Hill SAC is about 5.4km away from the eastern end of the preferred area with the Severn Estuary European Marine Site is at least 31km away. It has already been deemed that no pathway is present from having minerals development at Redpool's Farm that would result in any conceivable effect on conservation objectives of any European Site. Allocation 7: Preferred Area at Redpool's Farm, Twyning can therefore be safely screened out [from Appropriate Assessment]. There is one Key Wildlife Site within 1km of the site –Brockeridge Common (760m north). The site is also within 1km of the following locally designated sites: Ripple Brook; Ripple Lake & The Napps; Ripple Meadow; and River Severn (all in Worcestershire); and the Mythe Composite Site. The 2014 GCC site assessment noted that a portion of the land falls within Bushley SNA. Some of the land to the south of the site has been agriculturally improved with hedgerows and trees around field margins/boundaries in places. It is only slightly elevated above the general floodplain level to the west but significantly elevated to the east. If mineral is extracted on the site then there is some scope to restore it to Coastal & Floodplain Grazing Marsh or Eutrophic Standing Water or Reedbed which will enhance the ecological network present. As the site borders Mythe Brook which may have some biodiversity interest this will need to be considered. Therefore there is some potential for negative effects on biodiversity. However, due to the site's partial location within the Bushley SNA, there are opportunities for habitat creation and biodiversity enhancement in the longer term. Therefore, overall a mixed minor negative and positive effect is expected. These effects would be uncertain as the potential for effects will depend on the exact nature and design of the site and any restoration proposals, which would not be known until the planning application stage. The detailed development requirements for Allocation 07 in Appendix 6 of the Draft MLP specify the need for an analysis of potential impacts on the natural environment in regards to Mythe Railway KWS; Mythe Composite Site (lakes and reservoirs) KWS; and Brokeridge Common KWS all within Gloucestershire; and Ripple Brook LWS, Ripple Lake and The Knapps LWS, Ripple Meadow LWS and River Severn LWS contained in

SA Objective and Sub Questions	SA Score	Justification
		Worcestershire. The analysis will also need to investigate impacts on priority habitats and species which have been identified within 1km of the site. An analysis of any possible significant effects on internationally and nationally designated sites which may arise is also to be incorporated into the assessment, along with the need for the exploration of biodiversity enhancements, all of which should help provide mitigation for the potential negative effects identified.
8. To protect, conserve and enhance the landscape in Gloucestershire.	--?	The landscape assessment carried out by Atkins (June 2015) judged that there would be significant Moderate Adverse impacts on the landscape character of Twyning Hills LCA SV12A and the historic landscape character of the area. This is due to the scale of proposed development and creation of a new land use that would noticeably alter the character and tranquillity of the local area. Therefore, a significant negative effect is identified for this objective. However, uncertainty is attached, as a more detailed assessment would be required once specific proposals and mitigation measures are known. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged significant Major Adverse visual impacts on public bridleway ATW37 as it passes directly alongside and through some of the site parcels. There would be significant Moderate Adverse impacts on Bow Farm which it may be possible to mitigate through the provision of a well-designed boundary treatment around Parcels A and C. The detailed development requirements for Allocation 07 in Appendix 6 of the Draft MLP specify the need for a Landscape & Visual Impact Assessment will be necessary, which will analyse the sensitivity of national landscape character NCA 106 (Severn and Avon Vales) and the regional / local level classification –Unwooded Vale and River Meadows landscape character type and the Twyning Hills and Mythe Meadows landscape character areas that are described in the Various Vales (Gloucestershire) Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and	-	The PRoW bridleway ATW/37/1 runs through the site, north to south. The Atkins report judged significant Major Adverse visual impacts on public bridleway ATW37 as it passes

SA Objective and Sub Questions	SA Score	Justification
recreational assets.		directly alongside and through some of the site parcels. The GCC PRoW Team has identified that a diversion would be required. Furthermore, the GCC PRoW Team state that mineral developments could well offer opportunity of enhancement but at this stage and without checking on the ground or consulting the parishes it is too early to be exact. Therefore, the site could have minor negative effects on recreation activities as the PRoW might be out of use while diverted, and minerals extraction at the site could make nearby recreational assets less attractive for users. The detailed development requirements for Allocation 07 in Appendix 6 of the Draft MLP specify the need for an assessment of the PRoW network, with particular attention to path ATW 37/1.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is more than 500m from any national sites of geological interest (SSSI) or Regionally Important Geological Sites. Therefore, the site is not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	The south of the site is within 1km of five listed buildings located within Shuthonger, the closest being Twyning Farm including Walled Garden and Diary (Grade II) located approximately 200m away. There are 6 additional listed buildings within 1km east of the site, one of which is grade II* listed (Church of St Mary Magdalene, 530m east), and the others are grade II listed. The northern boundary of the site is within 600m of eight listed buildings located within Puckrup and Bow, the closest being the Bow Bridge Cottage (Grade II) located approximately 260m away. The northern boundary is also within 600m of Towbury Hill Camp Scheduled Ancient Monument, while the Church End Conservation Area is located 290m east. The eastern boundary of the site is within 460m of Church End – Twyning Conservation Area and the listed buildings located within it. The landscape assessment carried out by Atkins (June 2015) judged that there would be significant Moderate Adverse impacts on the the historic landscape character of the area. This is due to the scale of proposed development and creation of a new land use

SA Objective and Sub Questions	SA Score	Justification
		that would noticeably alter the character and tranquillity of the local area. However, despite the sensitivity of the Grade II Listed Building, to the south of Parcel B being judged to be High, the Atkins Report judged that the magnitude of change to this receptor would be Negligible as the proposal would result in a very minor alteration to the setting. It also concluded that the proposed development would have no further landscape or setting impacts upon other heritage features within the area. The GCC assessment notes that an enclosure or possible settlement site of unknown date is recorded on land west of the nurseries at the eastern end of site, and the course of a Roman road is probably present running north-south through the site. The assessment also notes that the impact of mineral extraction on the setting of listed buildings within Puckrup and Tywning will be an issue to be addressed. Therefore, the site could have a minor negative effect on the historic landscape character, however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. The GCC assessment notes that the archaeological interest in this site is as yet uncertain. Evidence from the surrounding landscape suggests the presence of early settlement. The assessment also notes that evaluation will be required to establish the extent and significance of any heritage assets present, and that the setting of adjacent listed buildings and conservation areas will require assessment. An assessment of heritage assets is outlined in the detailed development requirements for Allocation 07 in Appendix 6 of the Draft MLP. This will be an analysis of the area's potential archaeological interest with a mitigation strategy which could introduce constraints on future mineral working. This will help to preserve key heritage assets and their settings.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	The western third of the site is located within flood zones 2, 3a and 3b. A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After restoration, it is likely that surface pooling on site will increase if impermeable material is used. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded that subject to appropriate design, especially with regard to

SA Objective and Sub Questions	SA Score	Justification
		storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 07 in Appendix 6 of the Draft MLP specify the need for a flood risk assessment focused on the risk of river flooding and groundwater flooding. Particular attention will also need to be given to the identification of Flood Zone areas 2 and 3 over the Preferred Area. Potential sensitive receptors to flood risk include: - the nearby commercial nursery, Twyning Farm and Puckrup Golf Course
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a large area (32ha) and is partially within grade 3 and 2 agricultural land and could have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The site is adjacent to the A38 that runs along the eastern boundary of the site, and the increased road transport resulting from the site is likely to travel a shorter distance along local roads, and result in fewer localised air pollution issues that would otherwise occur from travelling more slowly on local roads. The site is not within 1km of an AQMA; therefore the site is expected to have a negligible impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The site is not within a source protection zone but does overlay a mixture of Secondary A and B aquifers. A hydrogeological impact assessment was carried out by Atkins. The potential for water quality or quantity impacts on on-site water features and Ripple Brook LWS, Ripple Lake and The Knapps LWS, Ripple Meadow LWS and River Severn LWS were identified as low significance. The impact on the secondary A aquifer was identified as significant; during operation, dewatering activities from quarrying is likely to result in decreased water levels, and pollution of the aquifer from the quarrying activities may decrease water quality. Additionally, altering the water table could impact the spring fed licensed surface water abstraction. The report also concludes that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore predicted for this SA objective,

SA Objective and Sub Questions	SA Score	Justification
		although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 07 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): - the River Severn; Ripple and Mythe Brook; Walmer Pool; Hill View Fishing Lakes; Ripple Lake; a number of unnamed brooks and ditches that lie across the Preferred Area; and a number unnamed lakes and ponds in the local vicinity. The underlying geology has been classified as a Secondary Aquifer of High Vulnerability.
17. 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	+/-?	The site is adjacent to the A38 that runs along the eastern boundary of the site, and could therefore have a minor positive effect on reducing the impacts of lorry traffic on the environment and communities as traffic associated with the site should not have to travel far on local roads. However, the GCC assessment notes that there is no highways history for the site. Although, the applicant has suggested that access at the east edge of the site onto the A38 could be used to access all resources including land at Bow Farm (which the operator controls) in Worcestershire. It is believed that there is sufficient highways capacity but significant junction improvements would be required. This could lead to adverse effects on the local community and the environment; however, effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 07 in Appendix 6 of the Draft MLP specify the need for a transport assessment, with advice from the Local Highways Authority.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 08 – Area of Search at Lady Lamb Farm, Fairford (Previously SGCW3 Horcott/Lady Lamb Farm Parcel A)

SA Objective	SA Score	Justification
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 is a property located at the centre of the site (Lady Lamb Farm), in addition to a further property located within 100m of the site boundary – Cherry Tree House (50m north). The nearest settlements are Fairford (540m northeast) and Meysey Hampton (810m west). Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have adverse health effects on local residents and communities within close proximity to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site and sensitive receptors in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	There is a property located at the centre of the site (Lady Lamb Farm), in addition to a further property located within 100m of the site boundary – Cherry Tree House (50m north). The nearest settlements are Fairford (540m northeast) and Meysey Hampton (810m west). Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be less likely at this site than a site for crushed rock as sand and gravel rarely require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. Although there are residential site allocations at Fairford in the Regulation 19 Cotswold District Local Plan (June 2016), they are not within 100m of this site. The site is within 1km of Fairford and Meysey Hampton, which are also within 1km of an existing mineral site (Horcott), therefore, continuing sand and gravel extraction activity in this area could have a cumulative effect on the amenity of the local community. The GCC assessment 2016 notes that a safe and suitable access from the sites frontage on to the A417 would need to be demonstrated as well as the likely acceptable limit on output tonnage and mitigation required to ensure a safe and suitable access given that

SA Objective	SA Score	Justification
		the route through Fairford Town would be unsuitable due to restricted widths. This may lead to adverse effects on local communities, however, effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts. Careful consideration should be paid to the local communities made up of the individual residential properties, farms and commercial and leisure enterprises located nearby to the Area of Search and those that comprise the western side of Fairford town; and the hamlets and villages of Meysey Hampton and Furzey Hill.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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. The GCC site assessment 2016 observes that there is no mineral operator interest in the site and it is unlikely for a planning application to be submitted in the plan period. However, if a mineral operator did show interest, the landowner would be happy for the site to be allocated and the site would provide a valuable contribution to the sand and gravel land bank.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The GCC assessment 2016 notes that the entire site lies within the safeguarding zone for RAF Fairford (Fairford Airfield lies 1.3km to the south). Therefore, the site could have a minor negative effect on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as this site may be restored to a form of open water use as it is located close to the Cotswold Water Park. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, the site may be restored to a dry

SA Objective	SA Score	Justification
		after use due to being located within the RAF Fairford safeguarding zone. This could increase the risk of flooding if the site was located within a flood risk area, which this site is not. Additionally, the GCC site assessment states that DIO Safeguarding should be consulted in any buildings or structures of metallic or reflective cladding and that are over 15.2m tall. Furthermore, the entire site lies within the safeguarding zone and technical Instrumental Landing System for RAF Fairford. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP specifies that Aviation safety should be considered as the Preferred Area falls within a zone where Instrumental Landing Systems (ILSs) may need to be operated. It also falls within the statutory Birdstrike zone for RAF Fairford. DIO Safeguarding will be consulted on all minerals development proposals within the Preferred Area.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard mineral resources from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	0?	There are no internationally or nationally designated sites within 1km of the site and no locally designated sites are within 250m of the site. There is a Key Wildlife Site within 1km of the site (Cotswolds Water Park, 650m east). The GCC site assessment 2016 notes the site is arable land with mainly defunct hedgerows but with a woodland copse in the southern area which will probably have some biodiversity interest. According to the GCC site assessment 2016, priority habitats plus protected and/or priority species have been recorded on, adjacent and within 1km of the land. The 2016 HRA Report states "Allocation 8: Area of Search at Lady Lamb Farm, Fairford comprises of parcel A (SGCW3 northern area) previously considered at the Site Options stage of the draft MLP. This area of search is well over 6km away from the nearest European Site which is part of North Meadow & Clattinger Farm SAC. Given the position in the catchment it has already been deemed that minerals development at Lady Lamb Farm would not result in any conceivable effect on conservation objectives of the SAC or any other European Site. Allocation 8: Area of Search at Lady Lamb Farm, Fairford can therefore be safely screened out." Given the above, the overall impact on biodiversity is likely to be negligible on this SA objective as there are unlikely to be any priority habitats or species affected and no significant enhancement opportunities. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning

SA Objective	SA Score	Justification
		application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The landscape assessment carried out by Atkins (June 2015) judged that there would be no significant landscape impacts on national and local landscape character or local features and designations. Therefore, a negligible effect is identified for this objective. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged significant Major Adverse visual impacts on Waitenhills Barn and public footpath BFA6. These impacts arise as a direct result of workings within Parcel A (which comprises this Allocation) and it is unlikely that they could be mitigated. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP specifies the need for a Landscape & Visual Impact Assessment, which should analyse the sensitivity of national landscape character NCA 108 (Upper Thames Clay Vales) and the regional / local level classification – Unwooded Vale and River Basin Lowland landscape character type and the Fairford and Lechlade landscape character areas that are described in the Various Vales (Gloucestershire) Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The site includes the PRoW footpath BFA/6/1 that crosses the eastern part of the site. The GCC PRoW Team has noted that this is a well walked path. Therefore, the site could have minor negative effects on recreation activities as the PRoW might be out of use while diverted, and minerals extraction at the site could make nearby recreational assets less attractive for users. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP specifies the need for an assessment of the PRoW network with particular attention given to paths BFA 6/1. Advice should be sought from the Local Highways Authority regarding any proposals to temporarily divert or permanent re-routing the affected path.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is more than 500m from any Regionally Important Geological Sites (the

SA Objective	SA Score	Justification
		nearest is Horcott Pit, 1.1km southeast). Therefore, the site is not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	This site is located within 1km of Fairford Conservation Area (Meysey Hampton Conservation Area is 1.1km to the west), and two Scheduled Monuments (Hemingford Barrow and Fairford Saxon Cemetery). The site is also within 1km of 34 Grade II listed buildings, mainly located to the northeast at Fairford Conservation Area. The closest listed buildings are both at Claremont House (the Lodge, and the Gatepiers and Quadrant Entrance Wall), which is located approximately 265m east. The Atkins landscape assessment, which assesses the potential impacts on historic landscape and local designated heritage assets found that the sensitivity of the group of Grade II Listed Buildings to the proposed development to be High. Mineral workings to the east of Parcel A (which comprises this Allocation) and north of Parcel B would affect the distant context of the setting of the buildings, although their primary setting within the property grounds will remain unchanged. This is judged to result in a Low magnitude of change. Overall it has been determined that the significance of effect on this receptor would be Minor Adverse. Therefore, the site could have a minor negative effect on the setting of these assets; however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. Furthermore the GCC assessment 2016 notes that numerous archaeological sites were identified on site, ranging in date from early prehistoric to Anglo-Saxon. The number of sites, their date range and therefore the intensity of the use of the area, led to it being characterised as of 'high archaeological potential' with some areas possibly meriting designation. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP specifies the need for an assessment of heritage assets for the Preferred Area that incorporates an analysis of its potential archaeological interest.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. After restoration, it is likely that surface pooling on site will increase if impermeable material is used. With the use of lower permeability materials, rainwater events may increase risk of flooding. Lower permeability materials used in backfilling may block the migration of groundwater through the site, causing water levels to rise upstream. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of

SA Objective	SA Score	Justification
		appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore predicted for this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP specifies the need for a flood risk assessment focused on the risk of groundwater flooding and increased surface water run-off. Potential sensitive receptors that may be subject to flood risk and will therefore require scrutiny include: - Waitenhills, Waitenhills Farm and Waiten Hill.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a large area (48ha) and is mostly within grade 3 agricultural land, and could therefore have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP specifies the need for a soil impact assessment, which identifies potential impacts and possible mitigation, if required, particularly in light of the presence of agricultural land of BMVAL quality grades 3a.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	0	The site is adjacent to the A417 that runs along the northern boundary of the site, and the increased road transport resulting from the site is likely to travel a shorter distance along local roads, and result in fewer localised air pollution issues that would otherwise occur from travelling more slowly on local roads. The site is not within 1km of an AQMA; therefore the site is expected to have a negligible impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The Atkins Hydrogeological Report outlined three areas on which impacts would have low significance. Ponds, secondary A aquifer (bedrock) and secondary A aquifer (superficial). In regards to ponds, the impacts are dewatering and increased suspended solids. In regards to the secondary A aquifer (bedrock) and secondary A aquifer (superficial), dewatering and diversion of groundwater are the impacts. A minor negative effect is therefore predicted for this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 08 in Appendix 6 of the Draft MLP

SA Objective	SA Score	Justification
		specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Marston Meysey Brook; River Coln; the network of drains and tributaries to the River Coln that lie across the Preferred Area; and several lakes and ponds concentrated in the local vicinity, to the east. Consideration should also be given to the Preferred Area being located within a Source Protection Zone Level 1 and that the underlying geology has been classified as a Secondary A Aquifer.
17. 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	+/-?	The site is adjacent to the A417 that runs along the northern boundary of the site, and could therefore have a minor positive effect on reducing the impacts of lorry traffic on the environment and communities as traffic associated with the site should not have to travel far on local roads. However, the GCC assessment 2016 notes that the site is not associated with any current minerals operations and safe and suitable access to the A419 would need to be demonstrated along with the likely acceptable limit on output tonnage and mitigation required given that the route through Fairford Town would be unsuitable due to restricted widths. This may lead to negative effects on local communities and the environment; however, effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 09 – Areas of Search at Land between Kempsford & Whelford (Previously SGCW4 Kempsford/Whelford Parcel B)

SA Objective	SA Score	Justification
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 site is not within 100m of any sensitive receptors. The closest sensitive receptor is 20 Whelford Road, located 260m to the southwest. The nearest settlement is Kempsford, which is approximately 300m to the southwest. Therefore, the site is expected to have no effects on the health of local residents and communities. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-?	The site is not within 100m of any sensitive receptors. The closest sensitive receptor is 20 Whelford Road, located 260m to the southwest. The nearest settlement is Kempsford, which is approximately 300m to the southwest. Therefore, the site is expected to have no effects on the amenity of local communities. There are no residential sites allocated for development within 100m of the site as part of the Regulation 19 Cotswold District Local Plan (June 2016). However, as the site is within 1km of the settlement of Kempford, which is also within 1km of an existing mineral site (Kempsford/Manor Farm), continuing sand and gravel extraction activity in this area could have a cumulative effect on the amenity of the local community. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts, with consideration given to the local communities of Kempsford and Whelford. This should help provide mitigation for the potential negative effects identified. The Draft MLP also specifies the possible need for a transport assessment, also stating that the existing access route at Manor Farm should be utilised rather than a new, separate vehicular access.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire

SA Objective	SA Score	Justification
		economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The GCC assessment notes that the entire site lies within the safeguarding zone for RAF Fairford. Therefore, the site could have a minor negative effect on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as this site may be restored to a form of open water use as it is located close to the Cotswold Water Park. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, the site may be restored to a dry after use due to being located within the RAF Fairford safeguarding zone; however, this could increase the risk of flooding as mentioned against SA Objective 13 below. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outline the need for a full assessment of aviation safety, due to the proximity of the site to RAF Fairford and RAF Brize Norton.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard mineral resources from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	+?	The site has no internationally or nationally designated sites within 1km of the site and no locally designated sites are within 250m of the site. The 2016 HRA Report states "Allocation 9: Areas of Search at Land between Kempsford & Whelford comprises of parcels B, E & F (SGCW4) previously considered at the Site Options stage of the draft MLP. The most southerly search parcel is over 6.7km form North Meadow which is part of the North Meadow & Clattinger Farm SAC. Given the position in the catchment it has already been deemed that minerals development at Kempsford & Whelford would not result in any conceivable effect on conservation objectives of the SAC. Allocation 9: Areas of Search at Land between Kempsford & Whelford can therefore be safely screened out [from Appropriate Assessment]." According to the 2014 GCC assessment, there is a Local Wildlife Site nearby (River Thames LWS in Wiltshire). Furthermore, the GCC site assessment notes that the site could make a useful contribution towards the Kempsford SNA which adjoins the site and this should be sought. Restoration, however, would have to take account of safeguarding aircraft using RAF Fairford, i.e. from the risk of bird strike. Therefore, as, the GCC site assessment considers that there would be no adverse effects and biodiversity some biodiversity benefits are likely to accrue in a restoration scheme, and

SA Objective	SA Score	Justification
		overall the site's impact on biodiversity could be potentially uncertain or positive, this site is predicted to have minor positive effects on biodiversity. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need to investigate opportunities for biodiversity enhancements, such as the creation a series of ditch structures and hedge and tree lines; and facilitating species rich, rough grassland alongside more traditional agriculture. Consideration must be given to RAF Fairford, however, due to increased risk of bird strike, as well as flood risk due to the location of the site on a flood zone.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The landscape assessment carried out by Atkins (June 2015) judged that there would be no significant landscape impacts on national and local landscape character or local features and designations. Therefore, a negligible effect is identified for this objective. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged significant Moderate Adverse visual impacts on the Whelford Road and residential properties within Whelford and Kempsford. These impacts arise as a direct result of workings within Parcels B (which comprises this part of the Area of Search Allocation), C and D and the significance of these effects could be reduced through careful design of specific mitigation measures. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP specifies the need for a Landscape & Visual Impact Assessment, which will analyse the sensitivity of national landscape character NCA 108 (Upper Thames Clay Vales) and the regional / local level classification – River Basin Lowland landscape character type and the Fairford and Lechlade landscape character area, that are both described in the Various Vales (Gloucestershire) Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need to investigate opportunities for biodiversity enhancements, such as the creation a series of ditch structures and hedge and tree lines; and facilitating species rich, rough grassland alongside more traditional agriculture. Consideration must

SA Objective	SA Score	Justification
		be given to RAF Fairford, due to increased risk of bird strike, as well as flood risk due to the location of the site on a flood zone.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The site is within 250m of PRoW footpaths BKD 16/4, 17/1, 18/2 and 19/2-4, and could lead to minor negative effects on recreation activities and assets in the County by making the facilities less attractive for users.
11. To protect conserve and enhance geodiversity in Gloucestershire.	-?	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is located within 500m of Barden Aggregates Pit Regionally Important Geological Site. Therefore, the site could have a minor negative effect on this objective. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	This site is located within 1km of Kempsford Conservation Area, and Scheduled Monument sites near Manor Ham Barn. The site is also within 1km of 19 Grade II listed buildings, and one Grade I listed building (Church of St Mary the Virgin), which is located approximately 880m south. The landscape assessment carried out by Atkins (June 2015) judged that there will be a significant Moderate Adverse impact on the historic landscape character of the area. It may be possible to mitigate this impact to some extent through retention of field boundaries and restoration of the site following completion of extraction. The Atkins report found that there would be no significant impacts on heritage features within the area. Therefore, the site could have a minor negative effect on historic landscape character; however, the effects would be uncertain as a more detailed assessment would be required once proposals and mitigation measures are known. Furthermore the GCC assessment notes that the western part of the site contains a complex pattern of settlement and trackways, which could represent a significant constraint affecting development. Assessment and evaluation are required in order to determine the extent of the archaeological remains present. An assessment of heritage assets is outlined in the detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP. This will be an analysis of the area's potential archaeological interest with a mitigation strategy which could introduce constraints on future mineral working. This will help to preserve key heritage assets and their settings. This site is of potential relevance, due to the identification of complex trackways.

SA Objective	SA Score	Justification
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	There is a section in the east of this site that is within flood zones 2, 3a and 3b. A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After restoration the use of lower permeability materials may cause rainwater events to increase risk of flooding. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded however that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need for a Flood Risk Assessment focused on the risk of river flooding, groundwater flooding and increased surface water run-off. Particular attention will also need to be given to the identification of Flood Zone area 2. Potential sensitive receptors that may be subject to flood risk and will therefore require scrutiny include the properties that comprise the village of Whelford and RAF Fairford.
14. To protect and enhance soil / land quality in Gloucestershire.	-?	The site covers a medium area (19ha) and is mostly within grade 2 agricultural land (with a small area of non-agricultural land in the northwest), and could therefore have a minor negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. A soil impact assessment is outlined in the detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP due to the presence of agricultural land of BMVAL qualities 2 and 3a.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA or the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire,	-?	According to GCC, the site is not within source protection zones 1, 2 or 3. GCC also states that the site also overlies a Secondary A aquifer which may be capable of

SA Objective	SA Score	Justification
and to ensure that minerals development does not compromise sustainable sources of water supply.		supporting water supplies at a local scale, and may form an important source of base flow to rivers. In the hydrogeological report prepared by Atkins, the impact on the secondary A aquifer was deemed significant. During operation, dewatering activities are likely to decrease water levels in the aquifer. Pollution from the aquifer from fuels and other chemicals are possible, decreasing water quality. The report states that this site is unlikely to pose a significant threat during operation partly due to its size but also due to its distance from the main receptors in the area. In addition, it is likely that operators could put in place sufficient mitigation to manage the risks to water resources. After restoration, backfill could affect water quality in the area. Groundwater flow paths may be interrupted, depending on the permeability of the material. A minor negative effect is therefore predicted for this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 09 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Dudgrove Brook and several of its local tributaries and network of drains; River Coln; Thames & Severn Canal; River Thames; Bowmoor Lake; Coln Park Lake; and a number of unnamed ponds and lakes concentrated to the north of the Areas of Search. All Areas of Search are also located less than 1km of a Source Protection Zone Level 3 and the underlying geology has been classified as a Secondary Aquifer of High Vulnerability.
17. 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	-?	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. However, the GCC assessment notes that in recent years a second quarry (Stubbs Farm) was also operating out of Washpool Lane and movements were accommodated within the highways network. This quarry has since closed. Therefore, there is established access and infrastructure in place which could enable this site to be worked. This may help reduce the adverse impacts of lorry traffic on the environment and communities. However, this would be uncertain, as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP specifies the possible need for a transport assessment, and also states that the existing access route at Manor Farm should be utilised, rather than a new, separate vehicular

SA Objective	SA Score	Justification
		access.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 09 – Areas of Search at Land between Kempsford & Whelford (Previously SGCW4 Kempsford/Whelford Parcel E)

SA Objective	SA Score	Justification
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 site is within 100m of one property (Watersmeet, 60m north). The nearest settlement is Wheslford, where there are properties within 170m to the west of the site. Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have a negative effect on the health of local residents and communities within close proximity to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site and sensitive receptors in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	The site is within 100m of one property (Watersmeet, 60m north). The nearest settlement is Wheslford, where there are properties within 170m to the west of the site. Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be less likely at this site than a site for crushed rock as sand and gravel rarely require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. There are no residential sites allocated for development within 100m of the site as part of the Regulation 19 Cotswold District Local Plan (June 2016). In addition, as the site is within 1km of the settlement of Whelford, which is also within 1km of existing mineral sites (Kempsford/Manor Farm and Claydon Pike/Coln/Thornhill Farm), continuing sand and gravel extraction activity in this area could have a cumulative effect on the amenity of the local community. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP specify the need for an analysis of potential amenity impacts, with consideration given to the local communities of Kempsford and Whelford. This should help provide mitigation for the potential negative effects identified. The Draft MLP also specifies the possible need for a transport assessment, also stating that the existing access route at Manor Farm should be utilised, rather than a new, separate vehicular access.

SA Objective	SA Score	Justification
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The GCC assessment notes that the entire site lies within the safeguarding zone for RAF Fairford, and partially within the safeguarding zone for RAF Brize Norton. Therefore, the site could have a minor negative effect on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as this site may be restored to a form of open water use as it is located close to the Cotswold Water Park. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, the site may be restored to a dry after use due to being located within the RAF Fairford safeguarding zone, however, this could increase the risk of flooding as mentioned against SA Objective 13 below. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outline the need for a full assessment of aviation safety, due to the proximity of the site to RAF Fairford and RAF Brize Norton.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard mineral resources from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The 2016 HRA Report states "Allocation 9: Areas of Search at Land between Kempsford & Whelford comprises of parcels B, E & F (SGCW4) previously considered at the Site Options stage of the draft MLP. The most southerly search parcel is over 6.7km form North Meadow which is part of the North Meadow & Clattinger Farm SAC. Given the position in the catchment it has already been deemed that minerals development at Kempsford & Whelford would not result in any conceivable effect on conservation

SA Objective	SA Score	Justification
		objectives of the SAC. Allocation 9: Areas of Search at Land between Kempsford & Whelford can therefore be safely screened out [from Appropriate Assessment]." Jenner's Farm Field Key Wildlife Site is located within the site boundary. In addition there are two SSSIs within 1km of the site (Cotswold Water Park SSSI, 270m north and Whelford Meadow, 960m northwest), as well as a Key Wildlife Site (Cotswold Water Park) 320m to the northeast. The 2014 GCC site assessment notes that it would be challenging to mitigate the impacts on biodiversity. Additionally, the Atkins hydrogeology report outlines the possibility of losing Jenner's Farm Field Key Wildlife Site due to quarrying activity and the GCC site assessment noted the site would need to compensate for the loss of Jenner's Farm Field KWS. However, the KWS was designated for Shepherd's needle which likes disturbed ground and so there is an opportunity to benefit the species through minerals development. Furthermore, the GCC site assessment notes that the site could make a good contribution towards the Coln Corridor SNA which overlaps the site and this should be sought. Restoration, however, would have to take account of safeguarding aircraft using RAF Fairford, i.e. from the risk of bird strike. Therefore, a mixed minor negative and positive effect is predicted for this objective. This effect is uncertain as it will depend on the exact nature and design of new sites and restoration proposals, which would not be known until the planning application stage. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need for an analysis of the site which will need to investigate opportunities for biodiversity enhancements, such as the creation a series of ditch structures and hedge and tree lines; and facilitating species rich, rough grassland alongside more traditional agriculture. Consideration must be given to RAF Fairford, due to increased risk of bird strike, as well as flood risk due to the location of the site on a flood zone.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The landscape assessment carried out by Atkins (June 2015) judged that there would be no significant landscape impacts on national and local landscape character or local features and designations. Therefore, a negligible effect is identified for this objective. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged significant Major Adverse visual impacts on Jenner's Farm, public footpaths BKD27, BKD28 and BKD34. These impacts arise as a direct result of workings within Parcels C, D and E (which comprises this part of Allocation 09) and the significance of these effects (with the exception of Jenner's Farm) could be

SA Objective	SA Score	Justification
		reduced through careful design of specific mitigation measures. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need for a Landscape & Visual Impact Assessment, which will analyse the sensitivity of national landscape character NCA 108 (Upper Thames Clay Vales) and the regional / local level classification – River Basin Lowland landscape character type and the Fairford and Lechlade landscape character area, that are both described in the Various Vales (Gloucestershire) Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The site is within 250m of PRoW footpaths BKD 27/1 and 28/2 (to the southwest), and could lead to minor negative effect on recreation activities assets in the County by making the facilities less attractive for users.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is not located within 500m of a Regionally Important Geological Site (the nearest RIGS is Thornhill Farm Pit, 935m northeast). Therefore, the site is not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	This site is located within 1km of six Grade II listed buildings, the nearest of which (Townsend Farmhouse) is located approximately 195m west. In addition, a Scheduled Monument (settlement site south of Claydon Cottages) is located 635m to the northeast. The landscape assessment carried out by Atkins (June 2015) judged that there will be a significant Moderate Adverse impact on the historic landscape character of the area. It may be possible to mitigate this impact to some extent through retention of field boundaries and restoration of the site following completion of extraction. The Atkins report found that there would be no significant impacts on heritage features within the area. Therefore, the site could have a minor negative effect on the setting of these assets; however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. Furthermore the GCC assessment notes that an enclosure is known on site from aerial

SA Objective	SA Score	Justification
		photographic evidence. Assessment and evaluation are required in order to determine the extent of the archaeological remains. An assessment of heritage assets is outlined in the detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP. This will be an analysis of the area's potential archaeological interest with a mitigation strategy which could introduce constraints on future mineral working. This will help to preserve key heritage assets and their settings.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	The majority of this site is within flood zone 2, with an area in the southeast that is also within flood zones 3a and 3b. A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After restoration the use of lower permeability materials may cause rainwater events to increase risk of flooding. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded however that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need for a flood risk assessment focused on the risk of river flooding, groundwater flooding and increased surface water run-off. Particular attention will also need to be given to the identification of Flood Zone area 2. Potential sensitive receptors that may be subject to flood risk and will therefore require scrutiny include the properties that comprise the village of Whelford and RAF Fairford.
14. To protect and enhance soil / land quality in Gloucestershire.	--?	The site covers a large area (20.5ha) and is mostly within agricultural land classified as grade 2 or grade 3, and could therefore have a significant negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. A soil impact assessment is outlined in the detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP due to the presence of agricultural land of BMVAL qualities 2 and 3a.

SA Objective	SA Score	Justification
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA or the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	According to GCC, the site is not within source protection zones 1, 2 or 3. GCC also states that the site also overlies a Secondary A aquifer which may be capable of supporting water supplies at a local scale, and may form an important source of base flow to rivers. A hydrogeological impact assessment taken out by Atkins outlines the significance of impacts on water quality and quantity. The impacts on the River Coln and Cotswold Water Park are judged as low significance, due to diversion of water away from these sites, an increase in volume of suspended solids into the river and a decrease in water quality in the two sites. The impact on the secondary A aquifer is deemed highly significant, due to dewatering and diversion of groundwater from this area of the aquifer and a decrease in water quality In the aquifer. The impact on Jenner's Farm Field is deemed significant; during operation, this key wildlife site will be lost due to de-watering causing water level changes. The report concluded that it is likely that operators could put in place sufficient mitigation to manage the risks to water resources. After restoration, the site will be lost to quarrying operations, resulting in a change of water levels. A minor negative effect is therefore predicted on this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 09 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Dudgrove Brook and several of its local tributaries and network of drains; River Coln; Thames & Severn Canal; River Thames; Bowmoor Lake; Coln Park Lake; and a number of unnamed ponds and lakes concentrated to the north of the Areas of Search. All Areas of Search are also located less than 1km of a Source Protection Zone Level 3 and the underlying geology has been classified as a Secondary Aquifer of High Vulnerability.
17. To reduce the adverse impacts of lorry traffic on the environment and communities through means such as:	-?	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. However, the GCC assessment notes that in recent years a second

SA Objective	SA Score	Justification
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		quarry (Stubbs Farm) was also operating out of Washpool Lane and movements were accommodated within the highways network. This quarry has since closed. Therefore, there is established access and infrastructure in place which could enable this site to be worked. This may help reduce the adverse impacts of lorry traffic on the environment and communities. However, this would be uncertain, as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need for a transport assessment, and also states that the existing access route at Manor Farm should be utilised, rather than a new, separate vehicular access.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 09 – Areas of Search at Land between Kempsford & Whelford (Previously SGCW4 Kempsford/Whelford Parcel F)

SA Objective	SA Score	Justification
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 site is within 100m of one property (Watersmeet, 70m west). The nearest settlement is Wheslford, where there are properties within 300m to the west of the site. Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have a negative effect on the health of local residents and communities within close proximity to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site and sensitive receptors in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	The site is within 100m of one property (Watersmeet, 70m west). The nearest settlement is Wheslford, where there are properties within 300m to the west of the site. Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be less likely at this site than a site for crushed rock as sand and gravel rarely require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. There are no residential sites allocated for development within 100m of the site as part of the Regulation 19 Cotswold District Local Plan (June 2016). In addition, as the site is within 1km of the settlement of Whelford, which is also within 1km of existing mineral sites (Kempsford/Manor Farm and Claydon Pike/Coln/Thornhill Farm), continuing sand and gravel extraction activity in this area could have a cumulative effect on the amenity of the local community. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP specify the need for an analysis of potential amenity impacts, with consideration given to the local communities of Kempsford and Whelford. This should help provide mitigation for the potential negative effects identified. The Draft MLP also specifies the possible need for a transport assessment, also stating that the existing access route at Manor Farm should be utilised, rather than a new, separate vehicular access.

SA Objective	SA Score	Justification
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The GCC assessment notes that the entire site lies within the safeguarding zone for RAF Fairford, and partially within the safeguarding zone for RAF Brize Norton. Therefore, the site could have a minor negative effect on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as this site may be restored to a form of open water use as it is located close to the Cotswold Water Park. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, the site may be restored to a dry after use due to being located within the RAF Fairford safeguarding zone, however, this could increase the risk of flooding as mentioned against SA Objective 13 below. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outline the need for a full assessment of aviation safety, due to the proximity of the site to RAF Fairford and RAF Brize Norton.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard mineral resources from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The 2016 HRA Report states "Allocation 9: Areas of Search at Land between Kempsford & Whelford comprises of parcels B, E & F (SGCW4) previously considered at the Site Options stage of the draft MLP. The most southerly search parcel is over 6.7km form North Meadow which is part of the North Meadow & Clattinger Farm SAC. Given the position in the catchment it has already been deemed that minerals development at Kempsford & Whelford would not result in any conceivable effect on conservation

SA Objective	SA Score	Justification
		objectives of the SAC. Allocation 9: Areas of Search at Land between Kempsford & Whelford can therefore be safely screened out [from Appropriate Assessment]." The Cotswold Water Park SSSI is located 36m to the north and Whelford Meadow SSSI 870m to the north. The site is also adjacent to Jenner's Farm Field Key Wildlife Site to the southwest, and 40m from the Cotswold Water Park Key Wildlife Site to the northeast. The GCC site assessment considers that the site poses a potential risk to the water environment and also notes the boundaries of the site are likely to hold good biodiversity value and so impact on biodiversity at least in the short-term is unlikely to be avoided. The site could make a good contribution towards the Coln Corridor SNA which overlaps the site and this should be sought. Restoration would have to take account of safeguarding aircraft using RAF Fairford, i.e. from the risk of bird strike. Therefore, overall a mixed minor negative and positive effect is predicted for this objective. This effect is uncertain as it will depend on the exact nature and design of new sites and restoration proposals, which would not be known until the planning application stage. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need for an analysis of the site which will need to investigate opportunities for biodiversity enhancements, such as the creation a series of ditch structures and hedge and tree lines; and facilitating species rich, rough grassland alongside more traditional agriculture. Consideration must be given to RAF Fairford, due to increased risk of bird strike, as well as flood risk due to the location of the site on a flood zone.
8. To protect, conserve and enhance the landscape in Gloucestershire.	0	The landscape assessment carried out by Atkins (June 2015) judged that whilst some significant landscape and visual impacts have been identified, they are concentrated in close proximity to the site or within the boundary of the site itself. No significant impacts have been identified as a direct result of mineral workings within Parcel F. Therefore, a negligible effect is identified for this objective. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outlines the need for a Landscape & Visual Impact Assessment will be necessary, which will analyse the sensitivity of national landscape character NCA 108 (Upper Thames Clay Vales) and the regional / local level classification – River Basin Lowland landscape character type and the Fairford and Lechlade landscape character area, that are both described in the Various Vales (Gloucestershire) Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this

SA Objective	SA Score	Justification
the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.		would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The site is within 250m of PRoW footpaths BKD 28/4, BLE 38/1, and BLE 44/1, and could lead to minor negative effect on recreation activities assets in the County by making the facilities less attractive for users.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is not located within 500m of a Regionally Important Geological Site (the nearest RIGS is Thornhill Farm Pit, 630m northeast). Therefore, the site is not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	This site is located within 1km of six Grade II listed buildings, the nearest of which (Townsend Farmhouse) is located approximately 320m west. In addition, a Scheduled Monument (settlement site south of Claydon Cottages) is located 340m to the northeast. No significant impacts were identified in the Atkins landscape assessment (which considered the impacts on historic landscape character and local designated heritage assets) as a direct result of mineral workings within Parcel F. Therefore, the site could have a minor negative effect on the setting of these assets; however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. Furthermore the GCC assessment notes that an enclosure, possibly of Roman date, has been recorded on site. Assessment and evaluation are required in order to determine the extent of the archaeological remains. An assessment of heritage assets is outlined in the detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP. This will be an analysis of the area's potential archaeological interest with a mitigation strategy which could introduce constraints on future mineral working. This should help to preserve key heritage assets and their settings.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	A large area in the south of this site is within flood zones 2, 3a and 3b. A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. Stockpiling of materials in areas that are susceptible to flooding may increase flooding off site due to reduction in flood plain storage. After

SA Objective	SA Score	Justification
		restoration the use of lower permeability materials may cause rainwater events to increase risk of flooding. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP outline the need for a flood risk assessment focused on the risk of river flooding, groundwater flooding and increased surface water run-off. Particular attention will also need to be given to the identification of Flood Zone area 2. Potential sensitive receptors that may be subject to flood risk and will therefore require scrutiny include the properties that comprise the village of Whelford and RAF Fairford.
14. To protect and enhance soil / land quality in Gloucestershire.	--?	The site covers a large area (44ha) and is mostly within agricultural land classified as grade 2, with some areas of grade 3 agricultural land. The site could therefore have a significant negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. A soil impact assessment is outlined in the detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP due to the presence of agricultural land of BMVAL qualities 2 and 3a.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA or the strategic highway network. Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	According to GCC, the site is not within source protection zones 1, 2 or 3. GCC also states that the site also overlies a Secondary A aquifer which may be capable of supporting water supplies at a local scale, and may form an important source of base flow to rivers. A hydrogeological impact assessment carried out by Atkins outlines the impacts on nearby receptors. Impacts on the River Coln were deemed of low significance, with the effects being the diversion of water from the river, and an increase in suspended solids. Impacts on Cotswold Water Park were deemed significant. During operation, a potential threat to the SSSI is likely in regards to water levels and quality. Dewatering

SA Objective	SA Score	Justification
		may result in decreased water levels in the park, leading to increased flow towards the River Coln. A decrease in water quality is also likely, due to chemicals used during quarrying operations. These effects are likely to continue until after restoration. The Atkins report also raises concerns regarding the secondary A aquifer, with impacts being deemed significant. The dewatering process will lower water levels, and fules and chemicals are likely to pollute the receptor. After regeneration, backfilling with low permeability mateirals may lead to flooding behind the parcel area. The report concludes that operators could put in place sufficient mitigation to manage the risks to water resources. A minor negative effect is therefore predicted on this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 09 in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Dudgrove Brook and several of its local tributaries and network of drains; River Coln; Thames & Severn Canal; River Thames; Bowmoor Lake; Coln Park Lake; and a number of unnamed ponds and lakes concentrated to the north of the Areas of Search. All Areas of Search are also located less than 1km of a Source Protection Zone Level 3 and the underlying geology has been classified as a Secondary Aquifer of High Vulnerability.
17. 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	-?	This site is more than 1km from the strategic highway network and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. However, the GCC assessment notes that in recent years a second quarry (Stubbs Farm) was also operating out of Washpool Lane and movements were accommodated within the highways network. This quarry has since closed. Therefore, there is established access and infrastructure in place which could enable this site to be worked. This may help reduce the adverse impacts of lorry traffic on the environment and communities. However, this would be uncertain, as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 09 in Appendix 6 of the Draft MLP specifies the possible need for a transport assessment, and also states that the existing access route at Manor Farm should be utilised, rather than a new, separate vehicular access.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change

SA Objective	SA Score	Justification
		as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 10 - Areas of Search at Down Ampney and Charlham Farm (Previously SGCW6 Charlham Farm Parcel A)

SA Objective	SA Score	Justification
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 site is not within 100m of any sensitive receptors. The closest sensitive receptors are located to the south in the settlement of Down Ampney, over 130m away. Therefore, the site is expected to have no effects on the health of local residents and communities. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	0	The site is not within 100m of any sensitive receptors. The closest sensitive receptors are located in the settlement of Down Ampney, where the nearest property 1 Suffolk Place, located 130m to the south. Therefore, the site is expected to have no effects on the amenity of local communities. Although sites are allocated for residential development on the eastern edges of Down Ampney in the Regulation 19 Cotswold District Local Plan (June 2016), there are no allocated future residential sites within 100m of this site which could result in landuse conflict. As Down Ampney and the nearby properties are not within 1km of any other existing mineral sites, there are no cumulative effects expected on the local community. The GCC assessment notes that this site is not associated with any current mineral operations and that safe and suitable access from the classified road, then onto the A1417 would need to be determined. This access could lead to effects on local communities; however, effects would be uncertain as the potential for effects will depend on the exact nature and design of the site, which would not be known until the planning application stage. However, the detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts, with consideration given to the local communities Down Ampney (including Broadleaze); Latton; Marston Meysey and nearby individual properties. Additionally, the draft MLP outlines the need for Full and detailed Transport Assessments with help from the Local Highways Authority.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.

SA Objective	SA Score	Justification
and ethnic backgrounds.		
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The GCC assessment notes that the entire site lies within the safeguarding zone for RAF Fairford. Therefore, the site could have a minor negative effect on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as this site may be restored to a form of open water use as it is located close to the Cotswold Water Park. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, the site may be restored to a dry after use due to being located within the RAF Fairford safeguarding zone, however, this could increase the risk of flooding as mentioned against SA Objective 13 below. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for the consideration of aviation safety. Additionally, DIO safeguarding will be consulted on all minerals development proposals within the Areas of Search.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard mineral resources from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The 2016 HRA Report states "Allocation 10: Areas of Search at Down Ampney and Charlham Farm comprises of parcels A, B & C (SGCW5) and A (SGCW6) previously considered at the Site Options stage of the draft MLP. The nearest European Site to Charlham Farm is North Meadow & Clattinger Farm SAC which is about 1.9km away (North Meadow) to the south. The nearest European Site to the Down Ampney Area of Search is at a closer 1km away and is again North Meadow & Clattinger Farm SAC. The Down Ampney area has been the subject of a previous cross border (with Wiltshire) planning application. This planning application has been subject of HRA and a letter dated 29th December 2011 from Natural England confirmed the view of both County Mineral Planning Authorities that the Down Ampney development would not result in

SA Objective	SA Score	Justification
		any hydrological or other effect on any conservation objectives of the SAC. In conclusion it is logical that Allocation 10: Areas of Search at Down Ampney and Charlham Farm can be safely screened out [from Appropriate Assessment]." The west of the site is adjacent to The Folly KWS, the site is also adjacent to the Ampney Brook which is a constraint but also an opportunity for biodiversity enhancement as it is in Ampney Corridor SNA. A woodland adjacent to Folly KWS has biodiversity interest which is on the opposite side of the Ampney Brook. Therefore, overall a mixed minor negative and positive effect is predicted for this objective. This effect is uncertain as it will depend on the exact nature and design of new sites and restoration proposals, which would not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	--?	The landscape assessment carried out by Atkins (June 2015) judged that there would be significant Moderate Adverse impacts on the regional Landscape Character Area TV1B. This is as a direct result of the presence of a quarry within the area, which has no quarries currently within it, resulting in impacts on character and tranquillity. Therefore, a significant negative effect is identified for this objective. However, uncertainty is attached, as a more detailed assessment would be required once specific proposals and mitigation measures are known. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged significant Major Adverse visual impacts on properties along the north-western edge of Down Ampney, Poulton Hill Farm, public bridleway BDA1, public footpath BDA2 and permitted paths through the Down Ampney Estate. It would not be possible to avoid or reduce these significant impacts without an amendment to the site boundary and / or accompanying design of effective mitigation measures. There would also be significant Moderate Adverse impacts on residential properties within Broadleaze, surrounding farmland, the public footpath to the south-west of the site and Down Ampney Road. It may be possible to reduce the significance of a number of these impacts through effective mitigation design. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for a Landscape & Visual Impact Assessment, which will need to analysis the sensitivity of national landscape character NCA 108 (Upper Thames Clay Vales) and that of the regional / local level classification – the River Basin Lowland and Dip Slope Lowland landscape character types and Down Ampney and Driffield Lowland landscape character areas, which are described in the Various Vales (Gloucestershire) Landscape Character Assessment.

SA Objective	SA Score	Justification
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The PRoW footpaths BDA 1/1 and 2/1 are located within the northern boundary of the site, and footpath 1/2 is adjacent to the eastern boundary. The GCC PRoW team has noted that the area is popular with walkers and that diversion of these footpaths would be required. Therefore, the site could have minor negative effects on recreation activities as the PRoWs might be out of use while diverted, and minerals extraction at the site could make nearby recreational assets less attractive for users. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for an assessment of the PRoW network, with attention given to paths and recreational routes BDA 1/1, ½ and 2/1.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is not located within 500m of a Regionally Important Geological Site (the nearest RIGS is South Cerney Gravel Pit, 3.7km west). Therefore, the site is not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	-?	This site is located within 1km of Down Ampney Conservation Area, and three Scheduled Monument sites (settlement at Bean Hay Copse, Village Cross at Down Ampney, and a Roman Villa). The site is also within 1km of 22 Grade II listed buildings, and two Grade I listed buildings (Church of All Saints and Down Ampney House). The landscape assessment carried out by Atkins (June 2015) judged that there would be significant Major Adverse impacts on the historic landscape character of the area. This is as a direct result of the change in land use across the majority of the historic landscape character area within which the site is located. However, the Atkins Report is judged that the proposed development would have no landscape or setting impacts upon landscape and heritage features or designations within the area. Furthermore, the 2016 GCC assessment notes that the county HER has recorded evidence of earlier settlement in the form of undated boundary ditches, trackways and enclosures identified mainly from aerial photography. In addition, a ring ditch (probably a Bronze Age burial site) and other Bronze Age finds have been recorded,

SA Objective	SA Score	Justification
		and a Roman burial found in the 19th century lies close to the western edge of the site. Therefore, the site could have a minor negative effect on historic landscape character and archaeology; however, the effects would be uncertain as a more detailed assessment would be required once proposals are known. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP outline the need for an assessment of heritage assets in the area, with an analysis of potential areas of archaeological interest. This may result in mitigation measures which limit future mineral working.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	The majority of this site is within flood zones 2, 3a and 3b. A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. After restoration the use of lower permeability materials may cause rainwater events to increase risk of flooding. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP outline the need for a flood risk assessment focused on the risk of river flooding and groundwater flooding. Particular attention will also need to be given to the identification of Flood Zone areas 2 and 3 over the Area of Search. Potential sensitive receptors to flood risk that will need to be investigated include the properties of the village of Down Ampney.
14. To protect and enhance soil / land quality in Gloucestershire.	--?	The site covers a large area (135ha) and is within agricultural land classified as grade 2 or grade 3, and could therefore have a significant negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP states that a soil impact assessment should be undertaken, due to the presence of agricultural land of BMVAL quality grades 2 and 3a.

SA Objective	SA Score	Justification
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA or the strategic highway network (A419 is 1.5km to the west). Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The site is not within source protection zone 1 but is within source protection zones 2 and 3. The majority of the site also overlies a Secondary A aquifer which may be capable of supporting water supplies at a local scale, and may form an important source of base flow to rivers. A hydrogeological assessment of this site was carried out by Atkins. It ranked the impacts of development on the receptors Down Ampney Pits KWS, the secondary A aquifer and North Meadow Cricklade as Low significance. The impact on Down Ampney Pits KWS is that dewatering of the working may reduce water level in the KWS. The impact on the secondary A aquifer relate to dewatering and diversion of groundwater from this area of the aquifer. The impact on the North Meadow Cricklade is that dewatering of the site may lead to a change in water level, affecting the SSSI. A minor negative effect is predicted on this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 10 (Charlham Farm) in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Ampney & Poulton Brook; numerous drains into the Ampney Brook that lie across the Area of Search and nearby; and several ponds mostly to the north and east. Consideration should also be given to the Area of Search being largely located within a Source Protection Zone Level 2 and that a very small area also falls in a Source Protection Zone Level 1. In addition, the underlying geology has been classified as a Secondary A Aquifer.
17. 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	-?	This site is more than 1km from the strategic highway network (A419) and as traffic associated with the site is therefore likely to travel further along local roads, there could be a minor negative effect on reducing the impacts of lorry traffic on the environment and communities. Furthermore, the GCC assessment notes that this site is not associated with any current mineral operations and that safe and suitable access from the classified road, then onto the A1417 would need to be determined. This access could lead to effects on local communities and the environment, however, effects would be uncertain as the potential for effects will depend on the exact nature

SA Objective	SA Score	Justification
c) sensitive lorry routing d) the use of sustainable alternative fuels		and design of the site, which would not be known until the planning application stage. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for a full and detailed Transport Assessments with help from the Local Highways Authority.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.

Allocation 10 - Areas of Search at Down Ampney and Charlham Farm (Previously SGCW5 Down Ampney Parcels A, B & C)

SA Objective	SA Score	Justification
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 site is within 100m of 16 properties which are a mix of residential and agricultural buildings with three properties located within the site boundary – 80, 81 and 75 Alex Farm. The nearest settlements are Down Ampney (600m west) and Marston Meysey (220m east). Therefore, the site could have a minor negative effect on health due to the potential for dust (PM10) to have a negative effect on the health of local residents and communities within close proximity to the site. However, this effect is uncertain, as the extent to which dust affects the nearby residents and settlement will depend on local circumstances such as the topography, nature of the landscape and the respective location of the site and sensitive receptors in relation to the prevailing wind direction. In addition, it is assumed that mineral extraction at any of the potential sites will be well operated and that dust avoidance and suppression measures implemented by the operators should be sufficient to avoid any potential health effects.
2. To safeguard the amenity of local communities from the adverse impacts of mineral development.	-	The site is within 100m of 16 properties, which are a mix of residential and agricultural buildings with three properties located within the site boundary – 80, 81 and 75 Alex Farm. The nearest settlements are Down Ampney (600m west) and Marston Meysey (220m east). Therefore, the site could have a minor negative effect on amenity for the nearby residents and settlement due to the potential noise and vibration associated with the mineral extraction operations. Noise and vibration effects may be less likely at this site than a site for crushed rock as sand and gravel rarely require blasting prior to excavation. However, the extent of these effects is very dependent on the scale of the operations and type of activities undertaken within the site as well as any potential mitigation measures proposed, which would be assessed at the planning application stage. While there may be some unavoidable short term effects due to noisy activities, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects. Although sites are allocated for residential development on the eastern edges of Down Ampney in the Regulation 19 Cotswold District Local Plan (June 2016), there are no allocated future residential sites within 100m of this site which could result in landuse conflict. As the nearby settlements and properties are not within 1km of any other existing mineral sites, there are no cumulative effects expected on the local community. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specifies the need for an analysis of potential amenity impacts, with consideration given to the local communities Down Ampney (including Broadleaze); Latton; Marston Meysey and nearby individual properties. This should help provide mitigation for the potential negative effects identified. Additionally, the draft MLP outlines the need for

SA Objective	SA Score	Justification
		Full and detailed Transport Assessments with help from the Local Highways Authority.
3. To promote sustainable economic development in Gloucestershire giving opportunities to people from all social and ethnic backgrounds.	0	No effect is likely as mineral sites are unlikely to present opportunities for spin off employment or other opportunities due to sites being self-served by the operators that own them.
4. To provide employment opportunities in both rural and urban areas of the County, promoting diversification in the economy.	+	All potential mineral sites regardless of their location are likely to have a minor positive effect on increasing employment levels. This is because all of the sites could have a direct and indirect positive effect on increasing employment levels during site preparation, operation and restoration, which could result in a small amount of job creation for local people in both rural and urban areas. However, job creation from new mineral extraction sites is not expected to be significant within the Gloucestershire economy; and given that the overall number of mineral sites 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.
5. To ensure that mineral sites do not compromise the safety of commercial or military aerodromes.	-?	The GCC assessment notes that the entire site lies within the safeguarding zone for RAF Fairford. Therefore, the site could have a minor negative effect on the safety of commercial or military aerodromes due to the potential for birds to provide a hazard to aircraft, especially as this site may be restored to a form of open water use as it is located close to the Cotswold Water Park. However, the effects would be uncertain as it is dependent on the type of restoration proposed and eventually developed on a site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage. For example, the site may be restored to a dry after use due to being located within the RAF Fairford safeguarding zone, however, this could increase the risk of flooding as mentioned against SA Objective 13 below. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for the consideration of aviation safety. Additionally, DIO safeguarding will be consulted on all minerals development proposals within the Areas of Search.
6. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	New potential mineral sites would not be inappropriate development as they are contributing to extraction of mineral resources, not limiting the ability to extract resources, and would therefore have no effect on this objective, which primarily relates to areas being designated as Mineral Safeguarding and Consultation areas to safeguard mineral resources from sterilisation by non-mineral development.
7. To protect, conserve and enhance biodiversity in Gloucestershire.	-/+?	The 2016 HRA Report states "Allocation 10: Areas of Search at Down Ampney and Charlham Farm comprises of parcels A, B & C (SGCW5) and A (SGCW6) previously considered at the Site Options stage of the draft MLP. The nearest European Site to Charlham Farm is North Meadow & Clattinger Farm SAC which is about 1.9km away (North Meadow) to the south. The nearest European Site to the Down Ampney Area of Search is at a closer 1km away and is again North Meadow & Clattinger Farm SAC. The

SA Objective	SA Score	Justification
		Down Ampney area has been the subject of a previous cross border (with Wiltshire) planning application. This planning application has been subject of HRA and a letter dated 29th December 2011 from Natural England confirmed the view of both County Mineral Planning Authorities that the Down Ampney development would not result in any hydrological or other effect on any conservation objectives of the SAC. In conclusion it is logical that Allocation 10: Areas of Search at Down Ampney and Charlham Farm can be safely screened out [from Appropriate Assessment]." There is potential for adverse effects on biodiversity at the Down Ampney Pits Key Wildlife Site within the Allocation boundary, and the 2016 GCC site assessment notes that there would have to be a proven long-term benefit for biodiversity to accept minerals extraction there. The GCC site assessment notes that the site is an extensive area of mainly arable but with significant strips and blocks of woodland (plantations) in places. A large variety of notable species are recorded but those actually on site are probably more limited. The site area overlaps Eysey SNA so there is scope for good contributions to this SNA but this would have to be in addition to compensating for woodland features etc. already present. Therefore, overall a mixed minor negative and positive effect is predicted for this objective. This effect is uncertain as it will depend on the exact nature and design of new sites and restoration proposals, which would not be known until the planning application stage.
8. To protect, conserve and enhance the landscape in Gloucestershire.	--?	The landscape assessment carried out by Atkins (June 2015) judged that there would be significant Major Adverse impacts on the regional and historic landscape character of the area. This is as a direct result of the change in land use across a large proportion of the respective areas within which the site is located. It may be possible to mitigate these impacts in the long term through careful restoration of the site following completion of extraction. Therefore, a significant negative effect is identified for this objective. However, uncertainty is attached, as a more detailed assessment would be required once specific proposals and mitigation measures are known. Although not impacting on the wider landscape and therefore this objective, it is noted that the Atkins report also judged significant Major Adverse visual impacts on Castle Hill Farm, properties 500m south of Castle Hill Farm, properties 500m north of Alex Farm, public bridleway BDA7 and public footpath BDA11. Each of these receptors are located within the boundary of the site itself and it would not be possible to avoid or reduce these significant impacts without an amendment to the site boundary, and / or accompanying design of effective mitigation measures. There would also be significant

SA Objective	SA Score	Justification
		Moderate Adverse impacts on Alex Farm, public footpath BDA9, the road along the southern boundary of Parcel C and the road from along the eastern boundary and through Parcel C. It may be possible to reduce the significance of a number of these impacts through effective mitigation design, particularly in relation to the boundary treatment of each Parcel. The landscape assessment also judged that there would be significant Major Adverse impacts on the regional and historic landscape character of the area. This is as a direct result of the change in land use across a large proportion of the respective areas within which the site is located. It may be possible to mitigate these impacts in the long term through careful restoration of the site following completion of extraction. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for a Landscape & Visual Impact Assessment, which will need to analysis the sensitivity of national landscape character NCA 108 (Upper Thames Clay Vales) and that of the regional / local level classification – the River Basin Lowland landscape character type and Down Ampney landscape character area, which are described in the Various Vales (Gloucestershire) Landscape Character Assessment.
9. To restore mineral sites to a high standard in order to achieve the maximum after use benefits including the conservation and enhancement of biodiversity, and delivery of green infrastructure where possible.	+?	The restoration of minerals sites is increasingly adopting innovative practice and therefore, any minerals site could have positive effects on landscape character, biodiversity, amenity and recreation in the longer term, once restored. However, this would be very dependent on the exact nature and proposed design of the restoration of the minerals site, which would not be known until the planning application stage.
10. To protect conserve and enhance Gloucestershire's material, cultural and recreational assets.	-	The site includes the PRoW footpath BDA 7/1, BDA 11/2 and footpath 9/2, which is adjacent to the eastern boundary. The GCC PRoW has identified that diversion these PRoWs would be necessary. The Atkins landscape assessment report also judged significant Major Adverse visual impacts on public bridleway BDA7 and public footpath BDA11. Each of these receptors are located within the boundary of the site itself and it would not be possible to avoid or reduce these significant impacts without an amendment to the site boundary, and / or accompanying design of effective mitigation measures. There would also be significant Moderate Adverse impacts on Alex Farm, public footpath BDA9, the road along the southern boundary of Parcel C and the road from along the eastern boundary and through Parcel C. It may be possible to reduce the significance of a number of these impacts through effective mitigation design, particularly in relation to the boundary treatment of each Parcel. Therefore, the site could have minor negative effects on recreation activities as the PRoW might be out of use while diverted, and minerals extraction at the site could make nearby recreational assets less attractive for users.

SA Objective	SA Score	Justification
		The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for an assessment of the PRoW network, with attention given to paths and recreational routes BDA 7/1, 11/2 and footpath 9/2.
11. To protect conserve and enhance geodiversity in Gloucestershire.	0	The working of and restoration of minerals sites is increasingly adopting innovative practice and there may be opportunities to incorporate and preserve important geological features within the site. However, this would be very dependent on the exact nature, working and proposed design of the restoration of the minerals site, which would not be known until the planning application stage. The site is not located within 500m of a Regionally Important Geological Site (the nearest RIGS is Horcott Pit, 3.1km northeast). Therefore, the site is not expected to affect this objective.
12. To protect conserve and enhance the historic environment, heritage assets and their setting.	--?	There is a scheduled monument (settlement at Bean Hay Copse) adjacent to the west of the site. In addition, Down Ampney Conservation Area is 425m to the west, which includes two grade I listed buildings and seven grade II listed buildings within 1km of the site. The grade I listed buildings are the Church of All Saints (760m from the site) and Down Ampney House (830m from the site). There are also nine other grade I listed buildings within 1km of the site, with the closest located adjacent to the north (Castle Hill Farm). The Atkins landscape assessment report judged that there would be significant Moderate Adverse impacts on the settlement at Bean Hay Copse Scheduled Monument and the Grade II Listed Buildings at Castle Hill Farm. This is as a direct result of the presence of a quarry in close proximity to the features which will affect their setting. Therefore, the site could have a significant negative effect on the setting of these assets, however the effects would be uncertain as a more detailed assessment would be required once proposals are known. The GCC assessment notes that a number of archaeological features are known from aerial photography across this site including settlement enclosures, trackways and other features. The use of the area as an airfield is likely to have resulted in sites being obscured and under-represented on aerial photographs. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP outline the need for an assessment of heritage assets in the area, with an analysis of potential areas of archaeological interest. This may result in mitigation measures which limit future mineral working.
13. To prevent flooding, in particular preventing inappropriate development in the floodplain.	-?	A large area in the east of this site is within flood zones 2, 3a and 3b. A hydrogeological assessment carried out by Atkins found that there would likely be a significant impact on flood risk. During operation, dewatering is likely to be required, and discharge of water may give rise to increased flood risk if the capacity of the receiving stream is exceeded. After restoration the use of lower permeability materials

SA Objective	SA Score	Justification
		may cause rainwater events to increase risk of flooding. With the use of lower permeability materials, the migration of groundwater through the site is likely to be blocked, allowing water levels to rise upstream of the site. This could give rise to an increased risk of groundwater flooding locally. The Atkins report concluded that subject to appropriate design, especially with regard to storage and stockpiles, and the inclusion of appropriate mitigation measures it is likely that any impacts can be reduced to acceptable levels. A minor negative effect is therefore likely on this SA objective. However this effect is uncertain as it will depend on the specific proposals that come forward and mitigation measures proposed. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specifies the need for a flood risk assessment focused on the risk of river flooding and groundwater flooding. Particular attention will also need to be given to the identification of Flood Zone areas 3 over part of the Area of Search. Potential sensitive receptors to flood risk that will need to be investigated include: the settlements of Down Ampney; Latton; Marston Meysey; Cricklade; Castle Eaton; Kempsford; and RAF Fairford
14. To protect and enhance soil / land quality in Gloucestershire.	--?	The site covers a large area (332.94ha) and is within agricultural land classified as grade 2 or grade 3, and could therefore have a significant negative effect on protecting or enhancing soil/land quality. However, this is uncertain as there may be opportunities to restore agricultural soils during restoration. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP states that a soil impact assessment should be undertaken, due to the presence of agricultural land of BMVAL quality grades 2 and 3a.
15. To protect and enhance air quality in Gloucestershire, helping to meet local, national and international objectives for air quality.	-	The site is not within 1km of an AQMA or the strategic highway network (A419 is 1.3km to the southwest). Traffic associated with the site is therefore likely to travel further along local roads. The site is therefore expected to have a minor negative impact on protecting air quality, although this impact is very dependent on the type of mineral site, the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would be assessed at the planning application stage.
16. To protect and enhance water quality and quantity in Gloucestershire, and to ensure that minerals development does not compromise sustainable sources of water supply.	-?	The site is not within source protection zone 1 but is within source protection zone 3. The majority of the site also overlies a Secondary A aquifer which may be capable of supporting water supplies at a local scale, and may form an important source of base flow to rivers. A hydrogeological assessment of the site was carried out by Atkins. In this report, the Marston Meysey Brook receptor's impacts were rated as low significance. The impacts on this receptor regarded diversion of water away from the brook, and an increase of

SA Objective	SA Score	Justification
		suspended solids into the brook. The impact on the secondary A aquifer was also deemed low significance, with the effect of dewatering and diversion of groundwater from this area of the aquifer. A minor negative effect is therefore predicted on this SA objective, although this is uncertain because it is very likely that sufficient mitigation measures will be implemented to reduce the residual risk to negligible. The detailed development requirement for Allocation 10 (Down Ampney) in Appendix 6 of the Draft MLP specifies the need for a hydrogeological impact assessment, which will consider potential risks, their significance and possible mitigation measures, if required, on the following nearby surface water bodies (i.e. within 1km): Marston Meysey Brook; Ampney and Poulton Brooks; River Thames; River Churn; Thames & Severn Canal; tributaries and drains to Ampney Brook that lie across the Area of Search; and several ponds and lakes to the south. Consideration should also be given to the Area of Search being located within Source Protection Zones Level 1, 2 and 3. In addition, the underlying geology has been classified as a Secondary A Aquifer.
17. 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	-	The site is within 1km of the A419, and the increased road transport resulting from the site is likely to travel a shorter distance along local roads, and result in fewer localised air pollution issues that would otherwise occur from travelling more slowly on local roads. The detailed development requirements for Allocation 10 in Appendix 6 of the Draft MLP specify the need for a full and detailed Transport Assessments with help from the Local Highways Authority.
18. To reduce contributions to and to adapt to Climate Change.	?	At this stage in the planning process it is not possible to determine the impacts of minerals sites on their ability to reduce contributions to and to adapt to climate change as it will depend on the proposal, which would be assessed at the planning application stage.