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West Sussex and South Downs National Park Joint Minerals Local Plan Proposed Submission Draft (Regulation 19) SA Report

Sustainability Appraisal including Strategic Environmental Assessment

Prepared by LUC
December 2016

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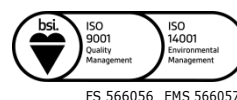
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December 2016

Planning & EIA
Design
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1 Introduction

- 1.1 This Sustainability Appraisal Report has been prepared by LUC, on behalf of West Sussex County Council (WSCC) and the South Downs National Park Authority (SDNPA) as part of the integrated Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) of the West Sussex and South Downs National Park Joint Minerals Local Plan (hereafter referred to as the JMLP).
- 1.2 This report relates to the Proposed Submission Draft West Sussex Joint Minerals Local Plan (Regulation 19) Document January 2017 (hereafter referred to as the "Proposed Submission Draft JMLP") and it should be read in conjunction with that document.
- 1.3 The National Planning Policy Framework (NPPF)¹ 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, WSCC and the SDNPA as Mineral Planning Authorities (MPA) are producing a new JMLP to replace the existing MLP (2003)², which will cover the period to 2033.
- 1.4 The preparation of the JMLP 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 JMLP must also be in accordance with the requirements of European Directive 2001/42/EC (known as the Strategic Environment Assessment, or SEA Directive).
- 1.5 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 Proposed Submission Draft JMLP. In particular, this report documents the likely significant sustainability effects of implementing the JMLP.

Sustainability Appraisal and Strategic Environmental Assessment

- 1.6 The purpose of Sustainability Appraisal is to promote sustainable development by integrating sustainability considerations in to the preparation and adoption of plans.
- 1.7 Sustainability Appraisal (SA) 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 JMLP) from the outset of its development.
- 1.8 Strategic Environmental Assessment (SEA) is also a statutory assessment process, required under the SEA Directive³, 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)⁴. 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'*.
- 1.9 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

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

² Available at:

http://www.westsussex.gov.uk/your_council/strategies_policies_and_public/policies/minerals_and_waste_policy/existing_local_plans.aspx

³ SEA Directive 2001/42/EC

⁴ Under EU Directives 85/337/EEC and 97/11/EC concerning EIA.

considerations, extending to social and economic impacts. The Government's Sustainability Appraisal guidance⁵ 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.

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

Table 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	Chapter 3 provides an outline of the main objectives of the JMLP and 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 3.
c) The environmental characteristics of areas likely to be significantly affected	Chapter 3 and Appendix 3.
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.
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 2.
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)	Chapters 5 and 6, and Appendices 4 and 5.

⁵ 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
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;	Chapters 5 and 6, and Appendices 4 and 5.
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 4.
i) A description of measures envisaged concerning monitoring in accordance with Art. 10;	Chapter 7.
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: <ul style="list-style-type: none"> 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 JMLP was undertaken in 2014.
<ul style="list-style-type: none"> 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) 	An SA Report was available for consultation alongside the Draft West Sussex JMLP (Regulation 18 version) from 14 th April to 17 th June 2016. This SA Report will be made available for consultation alongside the Proposed Submission Draft JMLP between January and March 2017.
<ul style="list-style-type: none"> 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). 	The JMLP is unlikely to have a significant effect on another EU Member State.
Taking the environmental report and the results of the consultations into account in decision-making (Art. 8)	

SEA Directive Requirements	Where covered in this SA report
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: <ul style="list-style-type: none"> 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 JMLP is adopted.
Monitoring of the significant environmental effects of the plan's or programme's implementation (Art. 10)	To be addressed after the JMLP is adopted.
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.

Taking Ecosystem Services into account

- 1.11 Since the Millennium Ecosystem Assessment (MEA) was undertaken⁶, the need to consider the implications of planned new development in delivering and supporting ecosystem services has continued to gain recognition. Ecosystem services, defined simply, are the benefits people obtain from ecosystems⁷ and are grouped into four main groups:
- **Provisioning** services (e.g. crops, water supply, trees).
 - **Regulating** services (e.g. flood regulation, climate regulation, and noise regulation).
 - **Cultural** services (e.g. aesthetic, educational, and recreational benefits).
 - **Supporting** services (e.g. nutrient cycling, soil formation).
- 1.12 **Table 1.2** lists in more detail the ecosystem services provided under the four main groups, and this list is taken from information presented in Figure 14 of the UK National Ecosystem Assessment Synthesis of the Key Findings⁸ and from the South Downs National Park Partnership Management Plan⁹.

Table 1.2: Ecosystem services within the four main groups

Ecosystem Service Group	Ecosystem Service
Provisioning	Crops
	Livestock
	Wild fish
	Farmed fish (aquaculture)

⁶ Millennium Ecosystem Assessment (2005) Millennium Ecosystem Assessment. Available at: <http://www.maweb.org/en/Index.aspx>

⁷ Millennium Ecosystem Assessment (2005) Millennium Ecosystem Assessment. Available at: <http://www.maweb.org/en/Index.aspx>

⁸ UK National Ecosystem Assessment (2011) The UK National Ecosystem Assessment: Synthesis of the Key Findings. UNEP-WCMC, Cambridge. Available at: <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

⁹ Available at: http://www.southdowns.gov.uk/_data/assets/pdf_file/0011/409799/SD_ManPlan_2013_15.pdf

Ecosystem Service Group	Ecosystem Service
	Timber
	Water
	Peat
	Wild game
	Honey
	Ornamentals
	Genetic resources
	Energy
Provisioning/Cultural	Wild species diversity
Cultural	Environmental settings
	Inspiration/Spiritual values
	Tranquillity
	Cultural heritage values
	Recreation and tourism services
Regulating	Climate & carbon storage
	Hazard (including flooding)
	Disease and pests
	Pollination
	Noise
	Water quality
	Water flow and flood
	Soil quality
	Air Quality
Supporting	Soil formation
	Nutrient cycling
	Water cycling
	Primary production
	Biodiversity

- 1.13 The MEA and UK National Ecosystem Assessment¹⁰ demonstrate the importance of ecosystem services to human well-being and showed that key services are being degraded and used unsustainably. At the international¹¹ and national¹² level there is consensus that this has to be addressed, as society is dependent on the flow of ecosystem services; people are integral parts of ecosystems and dynamic interaction exists between them and other parts of ecosystems. Furthermore, ecosystems and ecosystem services are constantly changing, driven by societal changes, which influence demand for goods and services and the way we manage our natural resources.
- 1.14 While the SEA Regulations and Government guidance on SA do not require the consideration of ecosystem services within the assessment, WSCC and SDNPA are keen to take account of potential impacts on or benefits for ecosystem services in the SA of the JMLP. There is potentially quite a bit of overlap between what the sustainability objectives are trying to achieve and the intentions to improve ecosystem services, therefore, **Chapters 2** and **4** outline how consideration of ecosystem services has been addressed in the SA of the JMLP.

Aim and structure of the report

- 1.15 This report is the SA/SEA report for the Proposed Submission Draft JMLP January 2017. 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'.
- 1.16 This chapter provides an introduction to the SA of the JMLP. The remainder of this report is structured into the following chapters:

¹⁰ Available at: <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

¹¹ Millennium Ecosystem Assessment (2005) Millennium Ecosystem Assessment. Available at: <http://www.maweb.org/en/Index.aspx>

¹² <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

- **Chapter 2 – Methodology**, describes the stages of the SA process and the approach used for the specific SA tasks, including how reasonable alternatives have been identified and appraised.
- **Chapter 3 – Sustainability Context for Minerals Development in West Sussex**, summarises the JMLP’s relationship with other relevant plans, policy and strategies, summarises the social, economic and environmental characteristics of West Sussex, and identifies the key sustainability issues relating to mineral development within West Sussex.
- **Chapter 4 – Sustainability Appraisal Framework and Assumptions**, describes the SA Framework and the assumptions used for assessing the potential sustainability effects of the JMLP.
- **Chapter 5 – Sustainability Appraisal Findings – Options**, sets out the main findings from the SA of the options considered for the JMLP, i.e. the Councils’ first draft of the Vision, Strategic Objectives, Policy Options, Development Management Policies and Site Options. It draws conclusions from the findings of the appraisals and includes recommendations for the JMLP to maximise the benefits of the plan and minimise any adverse effects.
- **Chapter 6 – Sustainability Appraisal Findings – Policies and Site Allocations**, sets out the main findings from the SA of the Vision, Strategic Objectives, Strategic Policies, Development Management Policies and Site Allocations included in the Proposed Submission Draft JMLP January 2017. It draws conclusions from the findings of the appraisals and makes some recommendations for the JMLP to maximise the benefits of the plan and minimise any adverse effects.
- **Chapter 7 – Monitoring**, makes recommendations regarding the approach to monitoring the significant sustainability effects of implementing the JMLP.
- **Chapter 8 – Conclusions**, summarises the key findings from the SA in terms of any significant sustainability effects predicted (positive or negative) from implementing the JMLP.

1.17 The main body of the report is supported by a number of appendices:

- **Appendix 1** presents the consultation comments that have been received to date in relation to the SA and describes how those comments have been addressed.
- **Appendix 2** sets out the review of relevant plans, policies and programmes (this was originally presented in the SA Scoping Report and has been updated to reflect the consultation comments received).
- **Appendix 3** contains the baseline information for West Sussex (as with Appendix 2, this was originally presented in the SA Scoping Report and has been updated to reflect the consultation comments received).
- **Appendix 4** presents the reasonable alternative policy options that were considered during the development of the JMLP (further explanation is provided in **Chapter 2**), as well as the SA assumptions that were applied during the appraisal of the site options to ensure consistency, as described in **Chapter 4**.
- **Appendix 5** presents the detailed SA matrices for the Policy Options considered for inclusion in the JMLP. The main findings of these are explained in **Chapter 5**.
- **Appendix 6** presents the detailed SA matrices for the Development Management Policy Options considered for inclusion in the JMLP. The main findings of these are explained in **Chapter 5**.
- **Appendix 7** presents the detailed SA matrices for the potential Site Options considered for inclusion in the JMLP. The main findings of these are explained in **Chapter 5**.
- **Appendix 8** presents the detailed SA matrices for the Strategic Policies set out in the Proposed Submission Draft JMLP. The main findings of these are explained in **Chapter 6**.
- **Appendix 9** presents the detailed SA matrices for the Development Management Policies set out in the Proposed Submission Draft JMLP. The main findings of these are explained in **Chapter 6**.

2 Methodology

- 2.1 In addition to complying with legal requirements, the approach being taken to the SA of the JMLP is based on current best practice and the guidance on SA/SEA set out in the National Planning Practice Guidance, which involves carrying out SA as an integral part of the plan-making process. **Table 2.1** below 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: Evidence Gathering and engagement
SA stages and tasks
<p>Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope</p> <ul style="list-style-type: none"> • 1: Identifying other relevant policies, plans and programmes, and sustainability objectives • 2: Collecting baseline information • 3: Identifying sustainability issues and problems • 4: Developing the SA framework • 5: Consulting on the scope of the SA
Local Plan Step 2: Production
SA stages and tasks
<p>Stage B: Developing and refining options and assessing effects</p> <ul style="list-style-type: none"> • 1: Testing the Plan objectives against the SA Framework • 2: Developing the Plan options • 3: Evaluating the effects of the Plan • 4: Considering ways of mitigating adverse effects and maximising beneficial effects • 5: Proposing measures to monitor the significant effects of implementing the Plans
<p>Stage C: Preparing the Sustainability Appraisal Report</p> <ul style="list-style-type: none"> • 1: Preparing the SA Report
<p>Stage D: Seek representations on the Plan and the Sustainability Appraisal Report</p> <ul style="list-style-type: none"> • 1: Public participation on Plan and the SA Report • 2(i): Appraising significant changes
Local Plan Step 3: Examination
SA stages and tasks
<ul style="list-style-type: none"> • 2(ii): Appraising significant changes resulting from representations
Local Plan Step 4 & 5: Adoption and Monitoring

SA stages and tasks

- 3: Making decisions and providing information

Stage E: Monitoring the significant effects of implementing the Plan

- 1: Finalising aims and methods for monitoring
- 2: Responding to adverse effects

- 2.2 The following sections describe the approach that has been taken to the SA of the JMLP to date and provide information on the subsequent stages of the process.

Stage A: Scoping

- 2.3 The SA process began in 2014 with the production of a Scoping Report for the JMLP, which was prepared by LUC on behalf of WSCC and SDNPA.
- 2.4 The Scoping stage of SA involves collating information about the social, economic and environmental baseline for the plan area and the key sustainability issues facing it, as well as information about the policy context for the preparation of the plan. The SA Scoping Report presented the outputs of the following tasks:
- Policies, plans and programmes of relevance to the JMLP were identified and the relationships between them were considered, enabling any potential synergies to be exploited and any potential inconsistencies and incompatibilities to be identified and addressed.
 - In line with the requirements of the SEA Regulations, baseline information was collected on the following 'SEA topics': biodiversity, population, human health, flora, fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage and the landscape. Data on social and economic issues were also taken in to consideration. This baseline information provides the basis for predicting and monitoring the likely effects of the JMLP and helps to identify alternative ways of dealing with any adverse effects identified. As with the review of plans, policies and programmes, baseline information that was collated in relation to the SA of the West Sussex Waste Local Plan was drawn upon. The baseline information for the SA of the Waste Local Plan was last updated in March 2013¹³, therefore, where relevant, it was updated and revised further to provide an appropriate focus in relation to the JMLP.
 - Drawing on the review of relevant plans, policies and programmes and the baseline information, key sustainability issues for West Sussex were identified (including environmental problems, as required by the SEA Regulations). Consideration was given to the likely evolution of each issue, if the Local Plan were not to be implemented.
 - A Sustainability Appraisal 'framework' was then presented, setting out the SA objectives against which options and subsequently policies, and sites in the JMLP would be appraised. The SA framework provides a way in which the sustainability impacts of implementing a plan can be described, analysed and compared. The SA framework comprises a series of sustainability objectives and subsidiary questions that can be used to 'interrogate' options and draft policies, and sites during the plan-making process. These SA objectives define the long-term aspirations of WSCC and SDNPA with regard to social, economic and environmental issues in relation to minerals development in the plan area. During the SA, the performance of the policy and site options (and subsequently draft policies and site allocations) is assessed against these SA objectives and sub-questions.

¹³ West Sussex County Council and South Downs National Park Authority (2013) West Sussex Waste Local Plan Sustainability Appraisal Report (Regulation 22)

- 2.5 The review of relevant plans, policies and programmes and the baseline information will be updated as necessary during each stage of the SA process to ensure that they reflect the current situation in West Sussex and continue to provide an accurate basis for assessing the likely effects of the JMLP. As such, Chapter 3 and Appendices 2 and 3 include updated versions of the review of relevant plans, policies and programmes and baseline information.
- 2.6 Public and stakeholder participation is an important element of the SA and wider plan-making processes. It helps to ensure that the SA report is robust and has due regard for all appropriate information that will support the plan in making a contribution to sustainable development. The SA Scoping Report for the JMLP was published in June 2014 for a five week consultation period with the statutory consultees (Natural England, the Environment Agency and Historic England). The comments received during the consultation were then reviewed and addressed as appropriate and a final version of the Scoping Report was published in January 2015.
- 2.7 **Table A1.1 in Appendix 1** of this report lists the comments that were received during the Scoping consultation and describes how each one has been addressed. In light of the comments received, a number of amendments were made to the review of plans, policies and programmes, the baseline information, key sustainability issues and the SA framework. These amendments were reflected in the final SA Scoping Report (January 2015) and are reflected in the parts of the Scoping work that are presented in **Appendix 2 and 4** of this report and summarised in **Chapters 3**.

Stage B: Developing and Refining Options and Assessing Effects

- 2.8 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). The SA can also help decision makers by identifying the potential positive and negative sustainability effects of each option.
- 2.9 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"*
- 2.10 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.
- 2.11 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 JMLP to date *Draft JMLP (April 2016)*

- 2.12 The options or reasonable alternatives that have been considered during development of the Draft JMLP April 2016 comprised the following:
- Proposed Vision and Strategic Objectives.
 - Policy Options (covering Minerals Supply, Minerals Resource Safeguarding and Minerals Infrastructure Safeguarding).

- Draft Development Management (DM) Policies.
 - Potential Minerals Site Options.
- 2.13 WSCC and SDNPA have prepared a Background Document which describes in detail how the options were identified and their evolution into policies within the JMLP. **Table A4.1** in **Appendix 4** of this report summarises the audit trail of the reasonable alternatives considered by WSCC and the SDNPA for each policy area in the MLP at each stage in its development, and explains which alternatives were taken forward into the final Draft JMLP or discounted.
- 2.14 The reasonable site options are presented in **Appendix 7** (which also includes the appraisal findings for all of the site options). The Minerals Sites Selection Report prepared by WSCC and SDNPA explains how the site options were identified, and the assessment undertaken by the authorities to help determine which sites to allocate within the JMLP. Twenty-five sites were initially identified, and these sites were reduced from 25 to 16 due to some further landscape assessment carried out by the SDNPA prior to the technical assessment stage (that included this SA), and due to deliverability issues which were identified following further discussions with landowners and operators. Therefore, only 16 of the site options were considered as reasonable alternatives and subject to SA along with other technical assessments: Habitats Regulations Assessment, Transport Assessment, Flood Risk Assessment and Landscape Assessment. All of these technical assessments have been referred to in this SA, as well as the authorities' own assessment, as described in **Chapter 4**.
- 2.15 The draft policy and site options were provided to the SA team in advance of the complete Draft JMLP. The potential site options were provided to LUC for appraisal in July 2015, with the draft policy options provided later in October 2015. The SA team sent draft SA matrices and summaries of findings to WSCC and SDNPA regarding the site options at the end of July 2015, and draft SA matrices and summaries of findings for the policy options in mid-November 2015. WSCC and SDNPA made some revisions in the final version of the Draft JMLP based on some of the SA recommendations (as explained in **Chapter 5**). In this way, the SA process was able to inform and influence the Councils' decisions regarding the proposed site allocations and draft policies to be included in the final Draft JMLP. The final version of the policy option appraisal matrices are presented in **Appendices 5 and 6**, and for the site options in **Appendix 7**. The findings of the options appraisal stage are presented in **Chapter 5**.
- 2.16 The SA findings for the final versions of the draft policies (including the two selected site allocations in the Draft JMLP) were presented in **Appendices 8 and 9** of the April 2016 SA Report, and summarised in **Chapter 6**.
- 2.17 Consultation responses received on the SA Report for the Draft JMLP (April 2016) have been considered and addressed where relevant within this SA Report, as summarised in **Table A1.2** in **Appendix 1**.

Proposed Submission Draft JMLP (January 2017)

- 2.18 As a result of consultation responses received, the Councils made a number of amendments to the Vision, Strategic Objectives and Policies following the consultation on the Regulation 18 Draft JMLP in April-June 2016. In addition the boundary of one of the site allocations, Ham Farm, has been reduced. The changes to the Vision, Strategic Objectives and Policies that have been made in the Proposed Submission Draft JMLP and the reasons for the changes are shown in **Table A4.2** in **Appendix 4**.
- 2.19 Most of the changes to the Proposed Submission Draft JMLP are minor clarifications to wording, and did not result in any revisions to the SA findings already identified at the Draft JMLP stage. However, the justification text for the appraisal of policies in **Appendices 8 and 9** has been updated where relevant to reflect the current wording of the policies. In addition, the SA findings for the Ham Farm site allocation in **Appendix 7** have been updated as required to reflect the revised boundary of Ham Farm.

Stage C: Preparing the Sustainability Appraisal report

- 2.20 This SA Report describes the process undertaken to date in carrying out the SA of the JMLP. 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.
- 2.21 Each site/policy option and subsequent proposed site allocation/draft policy was assessed against each SA objective, and a judgement was made with regards to the likely effect that they 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 matrices, in **Appendices 5, 6, 7 and 8** along with a brief justification of the judgement made.

Figure 2.1 Key to symbols and colour coding used in the SA of the Draft JMLP

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

- 2.22 Whether the achievement of the SA objectives will have a benefit or impact on particular ecosystem services is presented in a matrix for each site/policy option and site allocation/policy, through the use of letter codes for each of the four main ecosystem services groups, as shown in **Figure 2.2**, along with symbols indicating whether the effect will be positive (+), negative (-) or uncertain (?).

Figure 2.2: Key to ecosystem services symbols used in the SA of the Draft JMLP

P	Provisioning ecosystem services
C	Cultural ecosystem services
R	Regulating ecosystem services
S	Supporting ecosystem services

Stage D: Consultation on the Proposed Submission Draft JMLP (January 2017) and this SA Report

- 2.23 WSCC and SDNPA are inviting comments on the Proposed Submission Draft JMLP (January 2017) and this SA Report. The SA Report is being published on the Council's website for consultation alongside the Proposed Submission Draft JMLP (January 2017) which is programmed to take place between 16th January and 13th March 2017.

Stage E: Monitoring Implementation of the Plan

- 2.24 Stage E will follow adoption of the JMLP. 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 7**, and will be expanded at subsequent stages in the SA process, as the monitoring framework for the JMLP is established, and the likely significant effects of the final JMLP are identified.

3 Sustainability Context for Minerals Development in West Sussex

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 taken into account during its preparation.

Outline of the Proposed Submission Draft West Sussex JMLP (Regulation 19)

3.2 This version of the Plan is that which the authorities propose to submit to the Secretary of State for examination and includes the vision, objectives, strategy, and policies for minerals in West Sussex and the South Downs National Park covering the period until 2033. .

3.3 The Proposed Submission Draft JMLP includes:

- **The Vision and Strategic Objectives** – presents the aspirations for minerals supply in West Sussex and details how these are likely to be achieved. The 14 Strategic Objectives concern how minerals supply in West Sussex meets demand taking into account local issues.
- **Minerals in West Sussex** – provides background information on the type, location, supply and demand of minerals in West Sussex including their imports and exports.
- **The Spatial Context** – details West Sussex's current position within the mineral sector including the main opportunities and challenges as well as identifying the relevant policies and strategies.
- **Strategy and Policy Context** – describes the European and National policy, legislation and guidance as well as considering local strategies and plans which inform the Plan.
- **Strategic Minerals Supply** – sets out strategies for addressing the key minerals issues and challenges that have been identified in West Sussex. The strategies that are needed in order to meet the Vision and Strategic Objectives as well as acting on the key challenges facing the minerals sector in West Sussex. The 10 use-specific policies (M1-M10) in this section take forward the relevant minerals supply strategies (note that Policy M7 is divided into M7a and M7b).
- **Strategic Site Allocations** – includes one policy (M11) which identifies two site allocations that are considered suitable for mineral extraction, and therefore informs both local communities and developers about the development of local sites as well as provides additional certainty to the minerals industry. However, site allocation does not necessarily mean that the site will be developed – a planning application will determine this.
- **Development Management Policies** – provides 15 policies (M12-M26) that both support the Strategic Objectives and ensure that the natural and built environment, business, residents and visitors to West Sussex are protected from unacceptable harm derived from mineral supply activity. These policies will guide planning applications seeking the development of a minerals site.

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

- 3.4 The JMLP is not being 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 the National Park Management Plan and emerging Local Plan and 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.
- 3.5 A review has been undertaken of the other plans, policies and programmes that are relevant to the JMLP. The purpose of the review of other plans and strategies is to understand how they will influence the preparation of the JMLP 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, national and international social, economic and environmental issues. In line with the SEA Directive requirements, **Appendix 2** identifies the relationship that the plans and policies have with the development of the JMLP, and also shows how the environmental, social and economic objectives contained within those plans and policies have been taken into account during preparation of the JMLP and also the SA.
- 3.6 The most significant development in terms of the policy context for the JMLP was the 2012 publication of the National Planning Policy Framework (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 key Government intention was to streamline national planning policy and guidance. This has also resulted in the publication of national Planning Practice Guidance¹⁴ (PPG) as a streamlined web-based resource that accompanies the NPPF. A large majority of past guidance has been included in the PPG; however, many guidance documents were also cancelled.
- 3.7 The JMLP must be consistent with the requirements of the NPPF, which sets out information about the purposes of local plan-making. It states that:
- 3.8 *"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."*
- 3.9 However, with respect to the SDNP, the NPPF acknowledges that specific policies in the Framework, including National Park designation, may indicate development should be restricted. Para. 115 of the NPPF states: *Great weight should be given to conserving landscape and scenic beauty in National Parks.* It also states that the conservation of wildlife and cultural heritage are important considerations and should be given great weight within National Parks. Furthermore Para. 116 of the NPPF states: *Planning permission should be refused for major developments in these designated areas except in exceptional circumstances.* It continues by outlining that proposals should consider the local and national need of the development as well as any adverse impacts on the environment, landscape and recreational assets.
- 3.10 While the NPPF replaces a number of former Minerals Policy Statements, the principles for minerals planning are still retained in the NPPF¹⁵ including:
- The maintenance of landbanks for crushed rock and sand and gravel.
 - Designation of Mineral Safeguarding Areas.
 - Safeguarding existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways or minerals.
 - Providing for restoration and aftercare at the earliest opportunity and to high environmental standards.
 - Setting out environmental criteria against which planning applications will be assessed.

¹⁴ DCLG (2014). Planning Practice Guidance. Available at: <http://planningguidance.planningportal.gov.uk/>

¹⁵ See section 13 of the NPPF, available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Table 3.1: Relevant plans, policies and documents reviewed for the SA of the JMLP

International / European	
EU SEA Directive	
EU Birds Directive	
EU Waste Framework Directive	
EU Water Framework Directive	
EU Bathing Water Quality Directive	
EU Drinking Water Directive	
EU Air Quality Framework Directive	
EU Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora	
EU Management of waste from extractive industries	
EU Seventh Environmental Action Plan	
EU Biodiversity Strategy to 2020	
European Landscape Convention 2000	
IPCC's Fourth Assessment Report on Climate Change	
Johannesburg Declaration on Sustainable Development	
Aarhus Convention	
Ramsar Convention on Wetlands of International Importance	
Closing the Loop - An EU action plan for the Circular Economy 2015 (European Commission)	
National	
Natural Environment White Paper	
Water White Paper	
Rural White Paper	
National Planning Policy Framework	
Biodiversity 2020 – A strategy for England's wildlife and ecosystem services.	
Securing the Future: Delivering UK Sustainable Development Strategy	
The Air Quality Strategy for England, Scotland, Wales and Northern Ireland	
DEFRA Natural Environment and Rural Communities Act – Section 41: List of Habitats and Species of Principal Importance in England	
The Conservation of Habitats and Species Regulations	
Minerals Extraction and the Historic Environment	

Mineral Extraction and Archaeology: A Practice Guide
Guidance on the Managed Aggregates Supply System
Collation of the Results of The 2009 Aggregate Mineral Survey for England and Wales
Marine Policy Statement
Draft Vision and Objectives for the South Inshore and South Offshore Marine Plan Areas
The UK Low Carbon Transition Plan
Carbon Plan: Delivery our low carbon future
English National Parks and the Broads UK Government Vision and Circular
England's statutory landscape designations: a practical guide to your duty of regard
A Strategy for England's Trees, Woods and Forests
Underground, Under threat – Groundwater Protection: Policy and Practice
The Geological Conservation Review in the Context of the Wider Earth Heritage Conservation Effort
Flood and Water Management Act
Climate Change Act
Local
An Economic Strategy for West Sussex
West Sussex Transport Plan
West Sussex Waste Local Plan
Building A Sustainable Future: A strategy for delivering the corporate priority
West Sussex Environment and Climate Change Board: Using Less, Living Better Action Plan
Sustainable Community Strategy for West Sussex
West Sussex Strategic Flood Risk Assessment (SFRA)
South Downs National Park Partnership Management Plan
South Downs National Park Local Plan (in preparation)
Shoreham Joint Area Action Plan
Sussex Biodiversity Action Plan
South Downs Way Ahead Nature Improvement Area
Brighton and Lewes Downs UNESCO Biosphere designation
Water for Life and Livelihoods: River Basin Management Plan, South East River Basin District

Water for Life and Livelihoods: River Basin Management Plan, Thames River Basin District
Groundwater protection: Principles and Practice (GP3).
Shoreline Management Plans for Beachy Head to Selsey
Rivers Arun to Adur flood and erosion management strategy
Pagham to East Head Coastal Defence Strategy
Catchment Flood Management Plans for River Adur, Arun and Western Streams Catchment
Abstraction Licensing Strategies (CAMS process) Arun and Western Streams
Abstraction Licensing Strategies (CAMS process) Adur and Ouse
Abstraction Licensing Strategies (CAMS process) Mole
Lower Tidal River Arun Strategy
Aldingbourne Rife Integrated Flood Risk Management Plan and Works (ARIFRM)
Southern Water: Water Resources Management Plan 2015-2040
Thames Water: Water Resources Management Plan 2015-2020
South Downs National Park Water Cycle Study and SFRA Level 1 2014 (Draft Report)
High Weald AONB Management Plan
Chichester Harbour AONB Management Plan
A Strategy for the West Sussex Landscape
East Sussex Waste and Minerals Plan
Hampshire Minerals and Waste Plan
Surrey Minerals Plan
Portsmouth Water (2014) Final Water Resources Management Plan
Portsmouth Water (2013) Final Drought Plan
Surrey County Council (2015): Landscape Character Assessment
Kent County Council: Minerals and Waste Local Plan 2013 – 2030

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
- (c) the environmental characteristics of areas likely to be significantly affected.
- (d) Any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas

designated pursuant to Directives 79/409/EEC [the 'Birds Directive'] and 92/43/EEC [the 'Habitats Directive'].

- 3.12 Baseline information provides the context for assessing the sustainability of proposals in the JMLP 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 illustrate the environmental, social and economic 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. **Appendix 3** of this report provides an extensive discussion on the relevant baseline information for West Sussex 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.

Key Sustainability Issues

- 3.15 Identification of the key sustainability issues, and consideration of how these issues might develop over time if the JMLP is not prepared, help to meet the requirements of Annex 1 of the SEA Directive to provide information on:
 - (b) *The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan; and*
 - (d) *Any existing environmental problems which are relevant to the plan.*
- 3.16 An up-to-date set of key sustainability issues facing West Sussex was identified during the Scoping stage of the SA and was presented in the Scoping Report. **Table 3.2** describes the likely evolution of each key sustainability issue if the JMLP were not to be adopted.

Table 3.2: Key sustainability issues for West Sussex and the likely evolution of the environment in the absence of the JMLP

No.	Key Sustainability Issues	The likely evolution of the environment in the absence of the JMLP
1	<p>Poor health in some areas</p> <p>There are some communities in West Sussex that are relatively deprived, mainly in the towns along the coastal strip and in Crawley. Deprivation has a strong direct association with poorer health as well as other aspects of life that influence wellbeing, such as employment.</p>	<p>In the absence of the JMLP, there may be negative impacts on human health in some areas of West Sussex as a result of less stringent mitigation or poorly planned minerals development. However, there are fewer minerals sites in and around the towns along the coastal strip, and the minerals sector also contributes to employment levels, particularly in Adur District. Therefore, in the absence of the JMLP, employment in the minerals sector may decrease and have indirect effects on health and well-being due to unemployment.</p>
2	<p>Lower employment levels</p> <p>In 2015, 82.6% of residents that were of working age were employed, with 4.3% of</p>	<p>In the absence of the JMLP, employment in the minerals sector within West Sussex may further decrease.</p>

No.	Key Sustainability Issues	The likely evolution of the environment in the absence of the JMLP
	<p>residents unemployed¹⁶. Unemployment rates were lower in 2015 than the average for the South East and Great Britain. Also, a 2011 study to inform the West Sussex Local Economic Assessment showed that employment in the mining and quarrying sector grew from 2001 to 2008 by 0.2%, but employment in the sector is projected to decrease from 2008 to 2026 by 0.1%.</p>	
3	<p>Difficulties in terms of protecting West Sussex's environment whilst providing minerals needed by society</p> <p>Minerals can only be worked where they are found, and due to the close correlation between the location of mineral resources and areas of high quality and designated landscapes, which are considered to be sensitive environments, the need for mineral working should be balanced against the impact on protected landscapes.</p>	<p>In the absence of the JMLP, and appropriate policies, there may be damage to valued landscapes and sensitive environments within West Sussex as a result of less stringent mitigation or poorly planned minerals development. However, there is a high level of protection afforded to internationally and nationally designated landscapes, nature conservation sites and cultural heritage sites within the NPPF.</p>
4	<p>Declines in condition status of West Sussex's biodiversity</p> <p>Overall the county has lost 28% of the semi-natural habitat that existed in 1971. 77% of SSSI were in favourable condition in 2012 compared to 85% in 2008. Only 46.31% were in 'favourable' condition in 2014, and 51.78% were in an 'unfavourable recovering' condition¹⁷.</p>	<p>The provision of minerals for society's needs may cause adverse effects to the natural environment. However, JMLPs contain policies which aim to protect and enhance the environment. Despite the high level of protection afforded to internationally and nationally designated nature conservation sites within the NPPF, without the JMLP it is more likely that environmental designations in the County could be adversely affected by poorly planned minerals development or with less stringent mitigation measures applied. In addition to designated nature conservation sites, wider habitat networks (including BAP habitats) and land used by protected species could be adversely affected. The opportunity to protect and enhance the environment and achieve net biodiversity gains (e.g. through restoration) could be limited.</p>
5	<p>Changes in landscape character and tranquillity</p> <p>There are two Areas of Outstanding Natural Beauty (AONB) in the County, South Downs National Park (SDNP) and other important Landscape Character Areas. There is the potential for minerals development to contribute to detrimental</p>	<p>Despite the high level of protection afforded to nationally designated landscapes, within the NPPF, in the absence of the JMLP and appropriate policies there may be inappropriate mineral development within valued landscapes within West Sussex or adverse effects to them as a result of less stringent mitigation or poorly planned minerals</p>

¹⁶ <https://www.nomisweb.co.uk/reports/imp/la/1941962888/printable.aspx>

¹⁷ <http://www6.sssi.naturalengland.org.uk/Special/sssi/index.cfm>

No.	Key Sustainability Issues	The likely evolution of the environment in the absence of the JMLP
	<p>changes in landscape character in the County and plans should endeavour to avoid or minimise impacts as much as possible.</p> <p>The percentage of landscape classified as tranquil has reduced since 1960 when it was 69%, to 35% in 2007.</p>	development.
6	<p>Potential for damage to the historic environment</p> <p>In West Sussex there are 235 Conservation Areas, 7,532 Listed Buildings (including 176 Grade I, and 300 Grade II* listed buildings), 34 Registered Park and Gardens, and 346 Scheduled Monuments.</p>	Despite the high level of protection afforded to nationally designated cultural heritage sites within the NPPF, in the absence of the JMLP and appropriate policies there may be adverse effects to West Sussex's cultural heritage (including architecture and archaeology) as a result of less stringent mitigation or poorly planned minerals development.
7	<p>Climate change: warmer, wetter winters; drier summers, increase in flash flooding.</p> <p>134 extreme weather events between 1998 and 2008 in West Sussex.</p> <p>In the south east, it is estimated that in 2050¹⁸, the winter mean temperature will rise by 2.5°C and the summer mean temperature will rise by 3.1 °C¹⁹.</p>	Despite policies in the NPPF, in the absence of the JMLP and specific policies aimed at combating climate change and reducing the impacts, it is likely that contributions to climate change from minerals development in West Sussex will not be appropriately controlled and mitigated.
8	<p>Increases in greenhouse gas emissions</p> <p>UK Greenhouse gas emissions: 22.9 million tonnes (mt) from HGVs (2012 data).</p>	Despite policies in the NPPF, in the absence of the JMLP and specific policies aimed at combating greenhouse gas emissions and therefore climate change and reducing the impacts, it is likely that greenhouse gas emissions from minerals development in West Sussex will not be appropriately controlled and mitigated.
9	<p>Potential for flooding</p> <p>Certain areas in West Sussex are becoming more vulnerable and prone to coastal, fluvial, groundwater and surface water flooding.</p> <p>Currently 12.6% of West Sussex is within a flood plain.</p>	In the absence of the JMLP the potential for flooding is unlikely to be affected due to national policy included in the NPPF. Although, in the absence of the JMLP there is unlikely to be the opportunity to increase flood storage capacity, as some mineral developments (e.g. sand and gravel sites) are compatible with all flood risk zones and therefore once restored can be used as a means of flood storage.
10	<p>Water Quality</p> <p>The water quality within the County is not yet meeting 'good' ecological status in regards to the EU Water Framework</p>	In the absence of the JMLP and policies aimed at the protection of the water environment, water bodies and hydrological regimes in West Sussex are more likely to be adversely affected as a result of less stringent mitigation

¹⁸ Under the high emission scenario

¹⁹ <http://ukclimateprojections.metoffice.gov.uk/23907?emission=high>

No.	Key Sustainability Issues	The likely evolution of the environment in the absence of the JMLP
	<p>Directive. Only 19% of water bodies within the County have good ecological status.</p> <p>In West Sussex there are 30 groundwater bodies and 33% are classified as good overall. The chalk resource in particular acts as an important aquifer in the South East and provides the principle source of water supply in West Sussex.</p>	<p>or poorly planned minerals development.</p>
11	<p>Air Quality</p> <p>The number of Air Quality Management Areas has increased from 5 in 2008 to 10 in July 2015.</p>	<p>In the absence of the JMLP and policies aimed at reducing emissions from transport of minerals, air quality in West Sussex is more likely to be adversely affected as a result of less stringent mitigation or poorly planned minerals development.</p>
12	<p>Traffic Growth</p> <p>Current forecasts estimate that the amount of traffic on the roads within West Sussex will increase during 2011-2026. Traffic growth will continue to affect the transport network and has exceeded planned capacity in some places²⁰. Increased traffic could have a detrimental effect on quality of life within the County.</p>	<p>In the absence of the JMLP and policies aimed at reducing emissions from transport of minerals, traffic growth in West Sussex may continue in certain areas and along particular routes. However, other non-minerals related road traffic is likely to contribute more to overall traffic growth in the County.</p>

²⁰ West Sussex Local Transport Plan 2011-2026

4 Sustainability Appraisal Framework and Assumptions

- 4.1 This section helps to address the SEA Directive requirements in Annex 1:
- (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.
- 4.2 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 predicted, described, analysed and compared in a consistent way. Once SA Objectives are developed they provide the basis for testing options and policy formulation of relevant aspects of the JMLP. 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.
- 4.3 The SA Framework contains a number of objectives and has been developed by LUC, SDNPA and WSCC's Minerals and Waste Planning Policy officers. The objectives have been informed by the objectives previously identified in the March 2013 SA Report for the West Sussex Waste Local Plan, reviewed to be relevant to the Minerals Local Plan, reflect the review of relevant plans and programmes (as set out in **Appendix 2**) and baseline situation/key issues described in **Chapter 3** and **Appendix 3**. This included reviewing the SA objectives developed for the SDNP Local Plan to ensure that issues relevant to the SDNP have also been taken into consideration.
- 4.4 The policies and sites allocations included in the Proposed Submission Draft JMLP (January 2017) have been appraised against the SA Objectives, which are included in **Table 4.1** below. Each SA Objective has a number of subsidiary questions, which help to provide decision-making criteria to use during the identification of potential effects from the JMLP. The SA objectives presented in **Table 4.1** cover the topics required in the SEA Directive²¹, as demonstrated in **Table 4.2**.

Table 4.1: Sustainability Appraisal Framework for the JMLP

Sustainability Appraisal Objectives and Subsidiary questions
Social
<p>1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.</p> <p>Would the option/policy/site:</p> <ul style="list-style-type: none"> ○ Have harmful effects on human health and be sited close to sensitive receptor(s)? ○ Affect amenity through dust and noise (e.g. through blasting/traffic) or vibration? ○ Affect road safety? ○ Have the potential to create land use conflict issues? ○ Provide opportunities for improvements to health, well-being and amenity through enhancements? ○ Create cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential?
<p>2. To protect and, where possible, enhance recreation opportunities for all, including access to and enjoyment of the countryside, open spaces and Public Rights of</p>

²¹ Biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage and landscape

Sustainability Appraisal Objectives and Subsidiary questions

Way (PROW).

Would the option/policy/site:

- Be likely to affect the amenity of users on PROW, recreation areas/open spaces or other users of the countryside in the area, or affect views and/or tranquillity of these areas?
- Provide restoration opportunities for recreation?

Economic

3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.

Would the option/policy/site:

- Help the local economy, for example by generating new jobs, and how might implementing the policy impact on local businesses?
- Encourage the provision of more locally based skills and facilities?
- Affect tourists' decisions to visit an area?
- Compromise safe operating of commercial aerodromes (i.e. be near to an airfield and through restoration likely to attract large numbers of birds and increase the chance of bird strike)?

4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.

Would the option/policy/site:

- Reduce the extraction of virgin materials?
- Avoid sterilising mineral resources by preventing unnecessary development on or near to mineral resources?
- Require prior extraction if development that would sterilise mineral resources were to go ahead?

Environmental

5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.

Would the option/policy/site:

- Help enable the protection of landscape (particularly AONBs and SDNP) and townscape character?
- Contribute to the restoration of minerals sites, maximising after-use potential for beneficial use (e.g. agriculture, nature conservation, recreation, amenity, water storage, flood management) as appropriate?
- Facilitate the supply and use of local building materials to protect local character?
- Affect dark skies from light pollution?
- Protect and enhance the tranquillity of West Sussex including the SDNP and AONBs (e.g. by minimising noise arising from minerals facilities and transport)?
- Encourage landscape improvement?

6. To protect, conserve and enhance biodiversity including natural habitats and protected species.

Would the option/policy/site:

Sustainability Appraisal Objectives and Subsidiary questions

- Have an adverse effect on biodiversity, including the protection of designated sites (e.g. Special Protection Areas, Special Areas of Conservation, Ramsars, Sites of Special Scientific Interest, National Nature Reserves and Ancient Woodland)?
- Have an adverse effect on locally designated sites which form part of a network of ecosystems?
- Have an adverse effect on wider habitat networks (including BAP habitats) and land used by protected species?
- Provide opportunities for enhancing biodiversity and achieving net gains as part of the development or restoration?

7. To protect and conserve geodiversity.

Would the option/policy/site:

- Have an adverse effect on geodiversity, including the protection of geological features or sites (e.g. Sites of Special Scientific Interest, and Local Geological Sites, formally RIGS)?
- Create new geological exposures of education interest?
- Provide opportunities for geodiversity as part of the development or restoration?

8. To conserve, and where possible, enhance the historic environment.

Would the option/policy/site:

- Help enable the conservation of features of archaeological and other historic interest in the county, such as conservation areas, listed buildings, scheduled ancient monuments and areas of archaeological potential?

9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.

Would the option/policy/site:

- Minimise the loss of the best and most versatile agricultural land?
- Improve the soil quality?

10. To reduce air pollution and to protect and, where possible, enhance air quality.

Would the option/policy/site:

- Lead to a change in local air quality?
- Cause further deterioration of air quality in Air Quality Management Areas?
- Cause an increase in deposition of pollutants on sensitive designated nature conservation sites?

11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.

Would the option/policy/site:

- Affect the quality of surface and/or groundwater bodies?
- Interfere with the flows of water bodies?

12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.

Would the option/policy/site:

- Affect the likelihood of flooding or lead to inappropriate development in a flood risk zone (e.g. Flood Zones 2 or 3) contrary to national policy on flooding?
- Impact on flood defences?

Sustainability Appraisal Objectives and Subsidiary questions

- Provide opportunities for flood alleviation/mitigation?

13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.

Would the option/policy/site:

- Have the potential for rail or water-based access to and from mineral sites?
- Lead to the production of traffic-derived pollutants, including CO₂, NO₂ and PM₁₀ due to road transport to and from minerals sites?
- Optimise the use of the Lorry Route Network and reduce the use of rural roads thus reducing the disruption and pollutants caused by HGVs?

14. To reduce the emissions of greenhouse gases.

Would the policy/option/site:

- Lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery?
- Reductions in transport distances by supporting the location of mineral extraction sites in proximity to surrounding markets for minerals and to serve local needs?
- Encourage the use of renewable or lower carbon energy sources on-site (e.g. through the use of small on-site renewable energy sources, i.e. wind turbines, solar panels)?

- 4.5 In addition to showing how the proposed SA Objectives address the required SEA Directive Topics, **Table 4.2** also identifies which of the four main ecosystem services groups are relevant to each SA objective, and therefore shows how benefits for or impacts on the relevant ecosystem services are considered as part of the SA at the same time as predicting the sustainability effects of the JMLP. (The main groups and types of ecosystem services within them are presented in **Table 1.2.**)

Table 4.2: SEA Directive Topics and Ecosystem Services Categories supported by the SA Objectives

Proposed SA Objective for JMLP	SEA Directive Topic addressed by SA Objective	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	Population Human Health	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.
2. To protect and, where possible, enhance recreation opportunities for all, including access to and enjoyment of the countryside, open spaces and Public Rights of Way (PROW).	Population Human Health Material Assets	Protection of recreational assets would benefit the Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	Population Material Assets	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely

Proposed SA Objective for JMLP	SEA Directive Topic addressed by SA Objective	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?
		to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	Material Assets	Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	Landscape	Protection of landscape character would benefit the Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	Biodiversity Flora Fauna	Protection of biodiversity would benefit the Provisioning, Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	Population Soil Material Assets	Protection of geodiversity would benefit the Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	Cultural Heritage Material Assets	Protection of the historic environment would benefit the Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	Soil	Protection of soil quality would benefit the Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	Air	Protection of air quality would benefit the Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	Water	Protection of water quality would benefit the Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	Human Health Water Material Assets	Reducing vulnerability to flooding would benefit the Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	Population Human Health	Minimising road traffic would benefit the Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	Climatic Factors	Reducing greenhouse gas emissions

Proposed SA Objective for JMLP	SEA Directive Topic addressed by SA Objective	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?
		benefit the Regulating ecosystem services.

Assumptions taken into account during the SA

- 4.6 SA inevitably relies on an element of subjective judgement. In predicting and assessing the likely sustainability effects of the JMLP, the SA team's analysis of the characteristics of West Sussex and the sustainability issues it faces has been drawn upon as well as the professional experience of the SA team of having undertaken numerous SAs of minerals local plans and site allocations.
- 4.7 In making SA judgements for the appraisal of each site/policy option and subsequently each site allocation/policy included in the Proposed Submission Draft JMLP (January 2017), the SA team has also used the extensive data collated and the assessments produced by WSCC and SDNPA for each site (see **Appendix 4**).
- 4.8 To support the appraisal of potential mineral site options a series of decision-making criteria for each SA headline objective was developed (this can be seen in **Appendix 4**) 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 JMLP, 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, and in particular, draw on the technical assessments that were also carried out for the sites including the WSCC and SDNPA assessments, Habitats Regulations Assessment, Transport Assessment, Flood Risk Assessment and Landscape Assessment. For some of the assumptions in **Appendix 4**, evidence included in former planning policy statements and planning practice guidance has been referred to in support of some of the assumptions made, in addition to relevant sections of the Planning Policy Guidance.
- 4.9 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.

5 Sustainability Appraisal Findings – Options stage (Regulation 18 version)

- 5.1 This chapter describes the findings of the SA of the options that WSCC and SDNPA considered in preparing the earlier Draft West Sussex Joint Minerals Local Plan (Regulation 18 version). The options (or reasonable alternatives as they are referred to in the SEA Regulations) comprised the following:
- Proposed Vision and Strategic Objectives.
 - Policy Options (covering Minerals Supply, Minerals Resource Safeguarding and Minerals Infrastructure Safeguarding).
 - Draft Development Management (DM) Policies.
 - Potential Minerals Site Options.
- 5.2 An explanation of how the options were identified is provided in **Chapter 2**. These draft options were provided to the SA team in advance of the complete Draft JMLP. The potential site options were provided to LUC for appraisal in July 2015, with the draft policy options provided later in October 2015. During the latter part of 2015, an additional site was promoted to the Authorities, known as Buncton Manor Farm. The SA team sent draft SA matrices and summaries of findings to WSCC and SDNPA regarding the site options at the end of July 2015, and draft SA matrices and summaries of findings for the policy options in mid-November 2015. The additional site option was also assessed and sent to WSCC and SDNPA in December 2015. In this way, the SA process was able to inform and influence the Councils' decisions regarding the proposed site allocations and draft policies to be included in the Draft JMLP. The SA matrices prepared for the site and policy options are presented in **Appendices 5-7** and the summary of findings are presented below under the four main types of option listed above. Some recommendations relating to the SA findings were made, and are shown in bold text within the Vision and Strategic Objectives and Policy Options sections, and summarised at the end of the DM Policy Options section.
- 5.3 The Authorities considered the SA recommendations on the site and policy options when finalising the Draft JMLP, and the degree to which the recommendations were incorporated within the Draft JMLP (April 2016) is explained in a table at the end of the Policy Options section, and below each recommendation in the Development Management Policies section.

Proposed Vision and Strategic Objectives (for the Regulation 18 Draft JMLP)

Joint Minerals Local Plan Proposed Vision

- 5.4 The draft Vision for the Joint Minerals Local Plan for West Sussex and the South Downs National Park sets out a positive vision for the future to be achieved by the end of the plan period in 2033 which encourages sustainable economic growth as required by the NPPF, and is likely to have a positive effect on the majority of the SA objectives as shown in **Table 5.1**.
- 5.5 Positive effects have been identified for **social** SA objectives, as the Vision aims for West Sussex and the South Downs National Park to be a special place to live and visit while maintaining thriving communities locally which the production and transportation of minerals does not detract from. The Vision also supports the provision of minerals to enable the delivery of housing and other development to support local social and economic growth. A minor positive effect is therefore expected for SA objective 1 (health, well-being and amenity of residents). A significant positive effect is expected in relation to SA objective 2 (recreation) as the Vision also specifically identifies that the restoration of mineral sites is expected to increase opportunities for recreation and tourism. Protection of recreational assets would benefit the **Cultural** ecosystem services.

- 5.6 Contributing to mineral supply and the needs of other areas as well as meeting the County and National Park's own needs for minerals by ensuring aggregate provision supports social and economic progress locally, should result in significant positive effects on **economic** SA objectives 3 (local economy) and 4 (Conservation and supply of mineral resources). The positive effects expected on these SA objectives are also supported by the Vision stating that minerals are to be produced in a manner which contributes to a low carbon, circular economy and that mineral resources are to be safeguarded from sterilisation by other forms of development. Conservation of minerals would benefit the **Supporting** ecosystem services, as minerals contribute to soil formation and nutrient cycling.
- 5.7 Positive effects are likely for seven out of the ten **environmental** SA objectives with two of these expected to be significant: SA objectives 5 (landscape) and 6 (biodiversity). The Vision supports mineral production which is carried out in a way which conserves and enhances the outdoor environment of West Sussex, as well as the special qualities of the South Downs National Park. The restoration of mineral sites is also to be carried out to a high standard, as the Vision requires delivery of larger areas of well managed and connected areas of habitat including lowland heath, woodlands and wetlands to support enhanced populations of priority species. The Vision therefore supports the protection, conservation and enhancement of biodiversity, and landscape in West Sussex, and in this way would also benefit the **Provisioning, Regulating** and **Cultural** ecosystem services. Ensuring that valuable mineral resources in West Sussex and the National Park are safeguarded from sterilisation and that mineral sites will be restored to the highest standards should provide protection to and help preserve any geological features. However, as this is not specified in the wording of the vision, any positive effects on SA objective 7 (geodiversity) are currently minor and uncertain. The Vision contributes to the conservation and enhancement of the historic environment by supporting the use of locally produced bricks and locally sourced stone, to enhance the local distinctiveness and the archaeological heritage of West Sussex and the National Park. Therefore, a minor positive effect is expected on SA objective 8 (historic environment). Furthermore, a minor positive effect is expected on SA objectives 10 (air quality), 13 (transport), and 14 (greenhouse gases) given that the Vision supports a reduction in the transport of minerals by road, aims to ensure the supply of minerals via ports and railheads, and aims to ensure that minerals have been produced in a manner that contributes to a low carbon, circular economy. These positive effects would also benefit the **Cultural** and **Regulating** ecosystem services.
- 5.8 A negligible effect is expected in relation to the Vision for SA objectives 9 (soil), 11 (water resources and water quality) and 12 (flooding), as the Vision does not address these issues directly. The Vision also does not address the broader issues of environmental assets or natural resources which can have an indirect effect on these objectives. However, Strategic Objective 9 (flooding and the water environment) addresses the issues covered by SA objectives 11 (water resources and water quality) and 12 (flooding) and it was therefore **recommended that the Vision should make an overarching statement in relation to flooding and the water environment as a hook for the Strategic Objectives**. While effects are likely in relation to some of the Strategic Objectives (e.g. Strategic Objective 8, Natural and Historic Environment) for SA Objective 9 (soil), soil is not directly referred to in the Strategic Objectives. Therefore, while all aspects of the SA objectives do not need to be covered in the Vision, **if the protection of and/ or enhancement of soil ends up being directly referred to in the Strategic Objectives, it was recommend that that the Vision should make an overarching statement in relation to soil as a hook for the Strategic Objectives**.
- 5.9 It is noted that the above recommendations were not fully incorporated into the Vision in the Draft JMLP; however, the Vision now states "*Will have ensured minerals have been produced in a manner that protects and enhances the historic and natural environment*", which provides a general hook for soil, flooding and the water environment to be taken through into the Strategic Objectives.

Joint Minerals Local Plan Proposed Strategic Objectives

- 5.10 The proposed Strategic Objectives are generally compatible with and supportive towards achievement of the SA objectives, although there are a number of minor negative effects identified as well for six of the Strategic Objectives, particularly for the environmental SA

objectives. There is also no relationship between a number of the SA objectives and the Strategic Objectives, as shown in **Table 5.1**.

- 5.11 Strategic Objectives 2 (secondary and recycled aggregates), 6 (health and amenity), 9 (flooding and the water environment), 10 (transport) and 11 (after use) are expected to protect and enhance the health, wellbeing and amenity of local communities and visitors from the potentially adverse effects of mineral development; thereby having positive effects on **social** SA objective 1 (health, well-being and amenity of residents). The positive effects on this SA objective are expected to be minor for all identified Strategic Objectives except Strategic Objective 6 (health and amenity), which is expected to be significant, given that this Strategic Objective directly supports the enhancement of the health and local amenity of residents, businesses and visitors within the County. The other Strategic Objectives (1 (efficient production and use of minerals), 3 (provision of soft sand) 4 (mineral development sites and infrastructure), 5 (safeguarding minerals resources), 7 (landscape and townscape), 8 (natural and historic environment), and 12 (climate change)) are unlikely to affect SA objective 1. While protection of health and well-being would be supported by all four of the categories of ecosystem services, the positive effects identified for SA objective 1 are unlikely to have a particular impact or benefit on any of the ecosystem services.
- 5.12 Strategic Objectives 6 (health and amenity), 7 (landscape and townscape), and 11 (after use) are expected to have minor positive effects on SA objective 2 (recreation), and therefore also on the **Cultural** ecosystem services. Strategic Objectives 6 (health and amenity) and 7 (landscape and townscape) would have an indirect effect as they seek to protect and enhance the health and amenity of residents and visitors which recreation plays a vital role in, and conserve and enhance the landscape of West Sussex which provides many important opportunities and resources for recreation. Strategic Objective 11 (after use) has the potential to have minor positive effects on SA objective 2 (recreation), as it supports restoration to appropriate after uses, which could include recreation. The remaining 9 Strategic Objectives are not expected to affect SA objective 2 (recreation).
- 5.13 Strategic Objectives 1 (efficient production and use of minerals), 3 (provision of soft sand), 4 (mineral development sites and infrastructure), 5 (safeguarding mineral resources), 6 (health and amenity) and 11 (after use) are expected to have positive effects on **economic** SA objective 3 (local economy). This is because these Strategic Objectives support the sufficient supply of minerals to support local economic needs, seek to protect and maintain existing sites and infrastructure required to meet this mineral need, seek to protect local amenity for business uses, support the safeguarding of economically viable mineral resources, and may potentially provide after uses which can support the local economy (particularly tourist uses) through appropriate restoration. The identified positive effect is significant for Strategic Objectives 1 (efficient production and use of minerals) and 3 (provision of soft sand) due to the recognised importance that the supply of minerals plays in supporting the local economy. While protection of the local economy would be supported in particular by **Provisioning** ecosystem services, the positive effects identified for SA objective 3 is unlikely to have a particular impact or benefit on the ecosystem service.
- 5.14 Strategic Objectives 2 (secondary and recycled aggregates), 4 (mineral development sites and infrastructure) and 5 (safeguarding mineral resources) are expected to have significant positive effects on **economic** SA objective 4 (conservation and supply of mineral resources) as they support the conservation and supply of mineral resources through the supply and use of recycled and secondary aggregates, the aim to protect and maintain mineral development sites and infrastructure, and safeguarding potential economically viable mineral resources from sterilisation. The same Strategic Objectives would have benefits for the **Supporting** ecosystem services, as minerals contribute to soil formation and nutrient cycling. Strategic Objectives 1 (efficient production and use of minerals) and 2 (provision of soft sand) could have mixed, minor positive and minor negative effects on SA objective 4 (conservation and supply of mineral 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.
- 5.15 Strategic Objectives 5 (safeguarding mineral resources) and 6 (health and amenity) are unlikely to affect the majority of the **environmental** SA objectives (5-14). However, positive effects are identified for all environmental SA objectives from at least one of the Strategic Objectives,

because many of the Strategic Objectives are seeking to achieve similar environmental outcomes as the SA objectives. For example, Strategic Objectives 7 (landscape and townscape), 8 (natural and historic environment) and 11 (after use) are expected to have positive effects on many of the environmental SA objectives (including significant positive effects on SA objectives 5 (landscape), 6 (biodiversity), 7 (geodiversity), and 8 (historic environment)), as they seek to conserve, protect and enhance landscape, the natural and historic environment, and ensure high quality mitigation and restoration to appropriate after uses. Significant positive effects are also expected for other SA objectives, including SA objective 11 (water resources and water quality) and 12 (flooding) as Strategic Objective 9 (flooding and the water environment) seeks to minimise risks from flooding, safeguard groundwater aquifers and ensure the water environment is conserved and enhanced. Similarly, Strategic Objectives 10 (transport) and 12 (climate change) are expected to have significant positive effects on SA objectives 13 (transport) and 14 (greenhouse gases) respectively, as they address key elements of the SA objectives. These positive effects would also benefit the **Cultural** and **Regulating** ecosystem services in particular, with the positive effects on SA objective 6 (biodiversity) also benefitting the **Provisioning** ecosystem services.

There are also mixed, minor positive/minor negative effects expected for many of the **environmental** SA objectives, which in turn could have some negative impacts on the **Cultural**, **Provisioning** and **Regulating** ecosystem services. For example, mixed effects are expected for all **environmental** SA objectives in relation to Strategic Objectives 1 (efficient production and use of minerals), 3 (provision of soft sand) and 4 (mineral development sites and infrastructure), as minor negative effects may be caused by workings associated with the extraction of mineral resources (e.g. land take, landscape impact, increased HGV traffic). However, sites may also have the potential to have positive effects on environmental SA objectives due to the mitigation that can be put in place and the benefits and enhancements sites 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). Similar mixed effects were identified for a number of SA objectives in relation to Strategic Objective 2 (secondary and recycled aggregates) given that it would support a reduction in the need for the use and extraction of primary resources, although some minor negative effects would still be expected due to the effects caused by the associated workings (e.g. transport and air quality). Mixed effects were also identified for SA objectives in relation to Strategic Objective 11 (after use) as it will support landscape restoration and reductions in traffic levels and greenhouses gases, for example, due to mineral site activities ceasing and the associated restoration of sites. However, minor negative effects may also occur due to the after use proposed at sites, which could result in additional traffic generation, landscape impacts and/or potential flooding issues.

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

	Vision	1. Efficient production & use of minerals	2. Secondary and recycled aggregates	3. Provision of Soft sand	4. Mineral development sites and infrastructure	5. Safeguarding mineral resources	6. Health and amenity	7. Landscape and townscape	8. Natural and historic environment	9. Flooding and the water environment	10. Transport	11. After use	12. Climate change
Social													
1. Health, well-being and amenity of residents	+	0	+	0	0	0	++	0	0	+	+	+	0
2. Recreation	++	0	0	0	0	0	+	+	0	0	0	+	0
Economic													
3. Local economy	++	++	0	++	+	+	+	0	0	0	0	+	0
4. Conservation and supply of mineral resources	++	+/-	++	+/-	++	++	0	0	0	0	0	0	0
Environmental													
5. Landscape	++	+/-	+/-	+/-	0	0	0	++	++	0	0	+/-	0
6. Biodiversity	++	+/-	+/-	+/-	0	0	0	+	++	+	0	+	0
7. Geodiversity	+	+/-	0	+/-	0	0	0	+	++	0	0	+	0
8. Historic environment	+	+/-	0	+/-	0	0	0	++	++	0	0	+	0
9. Soil	0	+/-	+	+/-	0	+	0	0	+	0	0	+	0
10. Air quality	+	+/-	+/-	+/-	+/-	0	0	0	+	0	+	+/-	+
11. Water resources and water quality	0	+/-	0	+/-	0	0	0	0	+	++	0	+/-	0
12. Flooding	0	+/-	0	+/-	0	0	0	0	+/-	++	0	+/-	0
13. Transport	+	+/-	+/-	+/-	+/-	0	0	0	+	0	++	+/-	0
14. Greenhouse gases	+	+/-	+/-	+/-	+/-	0	0	0	+	0	+	+/-	++

Policy Options (for the Regulation 18 Draft JMLP)

Summary of Findings for Minerals Supply Options

- 5.16 This section summarises the SA findings for the mineral supply policy options. **Table 5.2** and **Table 5.3** summarise the scores from the full SA matrices for each policy option included in **Appendix 4**.

Sharp Sand & Gravel

- 5.17 Two reasonable alternative options were considered for sharp sand and gravel:
- Option SSG1 – Maintain supplies from existing permitted reserves of sharp sand and gravel.
 - Option SSG2 – Allow windfall sites to come forward in certain circumstances.
- 5.18 Policy option SSG1 is predominantly expected to have mixed minor positive and minor negative effects on the SA objectives (e.g. SA objectives 1 (health, wellbeing and amenity of residents), and 4 – 8), as the policy option supports the maintenance of supply from existing permitted reserves at Kingsham Quarry. Prolonging the life of this site may result in the continuation of possible negative effects on the health, wellbeing and amenity of residents or the landscape. However, maintaining supplies from existing permitted reserves, may avoid impacts from new sites on previously unaffected residents, and may still result in benefits to landscape and biodiversity through the site's eventual restoration. Minor negative effects are expected for SA objectives 10 (air quality) and 13 (transport) due to the potential for increased traffic movements and associated emissions arising from mineral transport. Conversely, minor positive effects might occur on SA objectives 12 (flooding) and 14 (greenhouse gas emissions) as sand and gravel workings are classed as water-compatible development and are potentially suitable development within all flood zones, and provision of sufficient sand and gravel sites within the plan area should reduce the need for additional importation of sharp sand and gravel into West Sussex, thereby reducing greenhouse gas emissions. An uncertain effect is identified for SA objective 14 because at this stage it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it depends on any measures implemented as part of the existing site and how successfully they have been implemented, which is not currently known. A minor negative effect is likely for SA objective 11 (water resources and quality) because despite the planning conditions stating mitigation measures, the nature of mineral workings leads to a determination in water quality.
- 5.19 Although this does not affect the SA findings, **it was recommended that this policy option and any resulting policy do not refer to minerals 'safeguarding', instead focuses on minerals supply, as minerals safeguarding is addressed in separate policy options.**
- 5.20 Policy option SSG2 is expected to have more minor negative effects and fewer minor positive effects than SSG1. It is likely to have a number of uncertain minor negative effects on SA objectives 1 (health, wellbeing and amenity of residents), 5 (landscape), 6 (biodiversity), 9 (soil) and 10 (air quality) and a minor negative effect on SA objective 13 (transport) due to the effects associated with mineral operations (e.g. dust, noise, traffic levels, landscape and biodiversity impacts, and land take). However, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, character, landscape, biodiversity, transport, and air, soil and water quality) would provide mitigation which should be sufficient to avoid potential negative effects. In contrast to SSG1, policy option SSG2 could have a minor positive effect on SA objective 3 (local economy) due to allowing new sharp sand and gravel 'windfall' sites to come forward in certain circumstances including the expansion of existing sites, which would help to sustain and enhance the vitality and viability of the local economy. The rest of the effects on the SA objectives would be the same as for SSG1.
- 5.21 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives described above for policy options SSG1 and SSG2.
- 5.22 While the JMLP does not need to identify additional sites for sharp sand and gravel, policy option SSG1 ensures that existing supplies can be maintained over the plan period. However, **it was**

recommended that policy options SSG1 and SSG2 be combined such that the policy includes the criteria in SSG2, as this could provide added security to the maintenance of supply and flexibility in the plan to allow potential 'windfall' sites to come forward should the existing permitted reserves become constrained for any unforeseen circumstances. This may therefore increase the sustainability of the approach to the supply of sharp sand and gravel in the JMLP.

Soft Sand – SS2

- 5.23 Only one policy option (SS2) was considered as a reasonable alternative option for soft sand. The policy option is expected to have significant negative effects for SA objectives 10 (air quality) and 13 (transport), due to the increased dependence on imports to meet requirements which cannot be met from indigenous supplies, which is likely to result in increases in lorry traffic transporting soft sand into West Sussex by road. Given that the deliverability of extracting additional soft sand from the limited resource outside of the SDNP is uncertain due to a lack of information concerning viability and landowner intentions; it is possible that imports of soft sand may be more likely to occur than development of new extraction sites within West Sussex. Therefore, **it was recommended that this policy option explicitly take a hierarchical approach to soft sand provision, by clearly prioritising supply from existing permitted reserves first and not allocating extensions or additional sites in the SDNP, then identifying additional allocations/areas of search beyond the SDNP, and finally allowing imports from outside the County if required. In addition, it was recommended the policy specifies that where imports are allowed, priority should be given to those that can be delivered via non-road transport modes.**
- 5.24 The policy option supports the maintenance of supply from permitted reserves and potential site allocations and/or areas of search that may come forward, and seeks to prevent the allocation of additional sites or extensions to existing sites within the South Downs National Park (SDNP). Therefore, this policy option is also expected to have mixed minor positive and minor negative effects on SA objectives 2 (recreation), and 4 – 8. For example, for SA objective 5 (landscape) there could be positive effects associated with not allocating sites in the SDNP and also longer term restoration of existing sites, but negative effects through the continued operation of existing sites in the SDNP and potential site allocations/areas of search coming forward outside of the SDNP. However, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, character, landscape, biodiversity and geodiversity) would provide mitigation which should help to avoid potential negative effects associated with any new proposals coming forward. Minor negative but uncertain effects are identified for SA objectives 1 (health and amenity) and 9 (soil quality) due to impacts such as dust, noise, vibration and traffic associated with new soft sand workings that may come forward, and the potential for loss of best and most versatile land. Conversely, uncertain minor positive effects might occur on SA objectives 3 (local economy) and 12 (flooding) because providing support for the maintenance of supplies from existing permitted reserves and identifying sites allocations and/or areas of search that could come forward is likely to help sustain and enhance the vitality and viability of the local economy, and as sand and gravel workings are classed as water-compatible development and are therefore suitable in all flood zones.
- 5.25 Although this does not affect the SA findings, **it was recommended that this policy option and any resulting policy does not refer to minerals 'safeguarding' and focuses on minerals supply, as minerals safeguarding is addressed in separate policy options.**
- 5.26 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for policy option SS2. For example, this policy option is considered likely to have significant negative uncertain effects in relation to **Regulating** ecosystem services due to the potentially inability to protect air quality or minimise road traffic.

Secondary and Recycled Aggregate – SRA1

- 5.27 Only one policy option (SRA1) was considered as a reasonable alternative option for the use of secondary and recycled aggregate. The policy option is expected to have a mixture of effects on the SA objectives. For example, it is likely to have minor negative uncertain effects on SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 8 (historic environment), 9 (soil), 10 (air quality) and 13 (traffic) due to the activities associated with secondary/recycled

aggregate facilities, such as how facilities involve lorry traffic movements, which at some sites may comprise multiple movements per day thereby not minimising transport of minerals by road or reducing air pollution. However, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, historic environment, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects

- 5.28 The intention of this policy option is also likely to have significant positive effects on SA objective 4 (conservation and supply of mineral resources), as supporting the use of secondary/recycled aggregate will reduce the extraction of virgin materials.
- 5.29 However, while the intention of the policy option to support the increased use of secondary/recycled aggregate is understood, the current wording of the policy option seems more like a policy that would be included in a district/borough local plan, as it is not the JMLP that will encourage non-minerals developers to use secondary/recycled aggregate in construction; management of general construction development is covered by policies in district/borough local plans. It is understood that there are other county matters (e.g. schools and libraries) which the County Council will be responsible for delivering, however, these would still be determined in accordance with the policies included in the district/borough local plans. The inclusion of such a policy option in its current wording would not have a direct effect on the supply of secondary/recycled aggregate as there is no mechanism in the policy option's wording to support this. **It was therefore recommended that the wording of the policy option is changed along the lines of 'supporting the supply of secondary and recycled aggregates and their processing sites in accordance with proposed development management policies (e.g. Plant, processing and secondary activities), minerals infrastructure safeguarding options and policies included in the West Sussex Waste Local Plan (e.g. Policies W1, W4 and W10)'.**

Silica Sand – SiS1

- 5.30 Only one policy option (SiS1) was considered as a reasonable alternative option for silica sand. The policy option is expected to mainly have minor negative uncertain effects and mixed positive and negative uncertain effects. Minor negative uncertain effects are expected on SA objectives 1 (health, wellbeing and amenity of residents), 6 (biodiversity), 9 (soil), 10 (air quality) and 13 (transport). Unallocated silica sand sites could have minor negative effects as a result of the associated mineral activities (e.g. traffic, noise, dust, land take etc.). However, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.
- 5.31 Mixed positive and negative uncertain effects are also expected for SA objectives 2 (recreation), 4 (conservation and supply of mineral resources), 5 (landscape), 7 (geodiversity) and 8 (historic environment). For example, the policy option is expected to have mixed minor positive and significant negative uncertain effects on SA objective 5 (landscape) as unallocated silica sand sites are likely to be located within the SDNP due to the location of the resource, thereby negatively impacting on this nationally important landscape designation. Sites may also have minor positive effects in the long term as the restoration of sites could lead to positive effects for the landscape. However, mitigation for the potential significant negative effects on landscape would be considered via proposed development management policies likely to be included in the JMLP (e.g. landscape). Furthermore, the policy option itself would require the stringent exceptional circumstances and public interest tests (set out in paragraph 116 of the NPPF) to be applied to any applications that come forward for development due to the location of the silica sand resource in the SDNP.
- 5.32 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for the policy option SiS1. For example, this policy option is considered likely to have significant negative uncertain effects (as part of a mixed effect on SA objective 5) in relation to **Cultural** ecosystem services due to the potentially inability to protect landscape character.

Clay

- 5.33 Two reasonable alternative options were considered for clay:

- Option CL1 – Allocate a specific site (Land Adjacent to West Hoathly Brickworks) and include a criteria-based policy that allows extensions to existing sites only).
- Option CL2 – Criteria-based policy (extensions to existing sites and 'satellite' sites only).

5.34 Policy option CL1 is predominantly expected to have mixed positive and negative uncertain effects, and minor negative uncertain effects. For example, the policy option is likely to have mixed positive and negative effects on SA objectives 2 (recreation), 4 (conservation and supply of mineral resources), 5 (landscape), 7 (geodiversity) and 8 (historic environment). However, the mixed negative effects are expected to be significant for SA objective 5 (landscape), as the allocated site (Land Adjacent to West Hoathly Brickworks) is located within the High Weald AONB which is a nationally important and sensitive landscape designation. Also, the mixed positive effects are expected to be significant for SA objective 8 (historic environment), as sites may work clay (e.g. Gault Formation) which is used in products such as hand-made bricks which have aesthetic and restoration uses, thereby contributing to conserving and enhancing West Sussex's historic environment. Minor negative uncertain effects are expected for SA objectives 1 (health, wellbeing and amenity of residents), 6 (biodiversity), 9 (soil), 10 (air quality) and 13 (transport) due to the effects associated with mineral operations (e.g. dust, noise, traffic levels, biodiversity impacts and land take). However, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.

5.35 Due to the nature of policy option CL2, it is expected to have similar effects to policy option CL1 on the SA objectives. However, key differences include that the mixed negative effects are expected to be minor and not significant for SA objective 5 (landscape), as while sites could result in landscape impacts in the short/long term, preference would be given to sites outside of the AONB and National Park. Furthermore, significant negative effects are likely for SA objectives 10 (air quality) and 13 (transport) as 'satellite' sites that could come forward under the policy option would lead to more vehicle movements, as material is transported to the brickworks from the 'satellite' sites, thereby increasing traffic movements and associated emissions. However, as mentioned above, proposed development management policies likely to be included in the JMLP would provide mitigation which should help to avoid potential negative effects.

5.36 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for policy options CL1 and CL2. For example, the policy options are considered likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 8) in relation to **Cultural** ecosystem services due to the potential ability to protect and enhance the historic environment.

Chalk

5.37 Two reasonable alternative options were considered for chalk:

- Option CH1 – Criteria-based policy (small scale sites).
- Option CH2 – Criteria-based policy (extensions only).

5.38 Both policy options (CH1 and CH2) allow proposals for new sites (small scale sites and extensions) to be assessed against a criteria-based policy. Due to the similarities between these types of sites when assessed against the SA objectives, they are expected to have the same effects on all SA objectives as shown in **Table 5.2** below. For example, both policy options are expected to have minor positive effects on SA objective 3 (local economy), as they provide support to new sites, thereby making a positive contribution to the local economy via new jobs and/or continuing to support existing jobs. Like other policy options considered (e.g. CL1 and CL2) the policy options are expected to largely have minor negative uncertain effects and mixed positive and negative effects. For example, both policy options are expected to have mixed significant positive and minor negative effects on SA objective 8 (historic environment) as sites permitted by these policy options could help conserve the historic environment in West Sussex and maintain its local distinctiveness, as the chalk worked in the sites could be used as restorative and conservation material (for example in the crypt of Chichester Cathedral), thereby contributing to conserving and enhancing West Sussex's historic environment. Sites permitted by the policy options may also be able to preserve findings and therefore benefit our understanding of the local

archaeology. However, the proposed policy options may also have minor negative effects on SA objective 8, 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.

- 5.39 Despite the potential negative effects on SA objectives due to policy options CH1 and CH2, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.
- 5.40 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for policy options CH1 and CH2. For example, the policy options are considered likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 8) in relation to **Cultural** ecosystem services due to the potential ability to protect and enhance the historic environment.

Consolidated Bedrock (e.g. Sandstone) – ST1

- 5.41 Only one policy option ST1 was considered as a reasonable alternative option for consolidated bedrock. The policy option is expected to have a number of minor negative uncertain effects on the SA objectives, including SA objectives 1 (health, wellbeing and amenity of residents), 6 (biodiversity) and 9 (soil) due to the effects associated with mineral operations (e.g. dust, noise, traffic levels, and land take). However, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.
- 5.42 The policy option is also expected to have a number of mixed effects, predominantly minor positive and minor negative uncertain (e.g. SA objectives 2 (recreation), 5 (landscape), 7 (geodiversity), 10 (air quality), and 13 (transport)). However, the policy option is likely to have mixed significant positive/ minor negative effects on SA objective 8 (historic environment). This is because sites permitted by the policy option may involve activities that affect the historic environment, but sites could also help conserve the historic environment in West Sussex and maintain its local distinctiveness, in some cases conserving buildings using similar, local stone, thereby conserving and enhancing West Sussex's historic environment.
- 5.43 In terms of ecosystem services, the potential positive or negative impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as outlined above for policy option ST1. For example, this policy option is considered likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 8) in relation to **Cultural** ecosystem services due to the potentially ability to protect the historic environment.

Oil and Gas

- 5.44 Two reasonable alternatives were considered for oil and gas:
- Option OG1 - Identify areas of search, aligned with PEDL areas, for location of headworks associated with extraction of oil and gas.

Plus a criteria-based policy or policies for conventional and unconventional oil and gas development which comes forward within the relevant area of search.
 - Option OG2 - Identify two areas of search for location of headworks associated with extraction of oil and gas:
 - one for conventional oil and gas which is aligned with PEDL areas.
 - one for unconventional oil and gas which is aligned with the PEDL areas but excludes 'protected areas' (as defined in the draft 'Onshore Hydraulic Fracturing (Protected Areas) Regulations 2015).
 Plus a criteria-based policy or policies for conventional and unconventional oil and gas development which comes forward within the relevant area of search.
- 5.45 Both policy options are expected to have mostly minor negative uncertain effects on the SA objectives (e.g. SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 6

(biodiversity), 7 (geodiversity), 8 (historic environment), 9 (soil), 10 (air quality), 13 (transport) and 14 (greenhouse gases)), as a result of the associated mineral activities (e.g. traffic, noise, dust, land take etc.). For example, levels of lorry traffic associated with developments may be substantial due to the transport of water used in operations and the transportation of extracted oil and gas. Furthermore, there is limited opportunity for conventional and unconventional oil and gas developments to have positive effects on the SA objectives (e.g. SA objectives 2, 7 and 8), due to the small scale of the sites and the nature of the developments lacking opportunity to contribute to the conservation of geological features and enhancement of recreation opportunities for example. However, proposed development management policies likely to be included in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.

- 5.46 Mixed positive and negative uncertain effects are also likely on SA objectives 4 (minerals resources) and 5 (landscape). For example, both policy options could result in permitting headworks and developments that could result in landscape impacts. However, it is likely that sites will be relatively contained and small scale. The policy options could also result in minor positive effects in the long term as the restoration of potential developments could lead to positive effects for the landscape via restoration. However, policy option OG2 is likely to have significant positive effects as part of the mixed effect on SA objective 5, as a separate area of search is proposed for unconventional oil and gas which excludes protected areas as defined in the draft Onshore Hydraulic Fracturing (Protected Areas) Regulations 2015, which includes National Parks and AONBs. Furthermore aspects of both options would have to meet the exceptional circumstances and public interest tests due to the potential for applications for developments coming forward in designated areas.
- 5.47 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for policy options OG1 and OG2. For example, policy option OG2 is considered likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 5) in relation to **Cultural** ecosystem services due to the potentially ability to protect landscape character.

Table 5.2: Summary of SA scores for the minerals supply options

SA Objective	SSG1	SSG2	SS2	SRA1	SiS1	CL1	CL2	CH1	CH2	ST1	OG1	OG2
1. Health, well-being and amenity	+/-	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
2. Recreation	0	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	-?	-?
3. Local economy	0	+	+	+	+	+	+	+	+	+	+	+
4. Minerals resources	+/-	+/-	+/-	++	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
5. Landscape	+/-?	-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	++/-?
6. Biodiversity	+/-?	-?	+/-?	+/-?	-?	-?	-?	-?	-?	-?	-?	-?
7. Geodiversity	+/-?	+/-?	+/-?	0	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	-?	-?
8. Historic environment	+/-?	+/-?	+/-?	-?	+/-?	++/-?	++/-?	++/-?	++/-?	++/-?	-?	-?
9. Soil quality	0	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
10. Air quality	-	-?	--?	-?	-?	-?	--?	-?	-?	+/-?	-?	-?
11. Water resources and quality	-	?	?	?	?	?	?	?	?	?	?	?
12. Flooding	+	+	+	0?	+	0?	0?	0?	0?	0	0?	0?
13. Transport	-	-	--?	-?	-?	-?	--?	-?	-?	+/-?	-?	-?
14. Greenhouse gas emissions	+	+	+/-?	+	+	+	+/-?	+	+	+	-?	-?

Table 5.3: Summary of possible benefits or impacts on the four main ecosystem services for the minerals supply options

SA Objective	SSG1	SSG2	SS2	SRA1	SiS1	CL1	CL2	CH1	CH2	ST1	OG1	OG2
1. Health, well-being and amenity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Recreation	C 0	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C -?	C -?
3. Local economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Minerals resources	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -
5. Landscape	C +/-?	C -?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?
6. Biodiversity	P +/-? R +/-? C +/-?	P -? R -? C -?	P +/-? R +/-? C +/-?	P +/-? R +/-? C +/-?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?
7. Geodiversity	C +/-?	C +/-?	C +/-?	C 0?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C -?	C -?
8. Historic environment	C +/-?	C +/-?	C +/-?	C -?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C -?	C -?
9. Soil quality	R 0	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?
10. Air quality	R -	R -?	R --?	R -?	R -?	R -?	R --?	R -?	R -?	R +/-?	R -?	R -?
11. Water resources and quality	-	R ?	R ?	R ?	R ?	R ?	R ?	R ?	R ?	R ?	R ?	R ?
12. Flooding	R +?	R +?	R +?	R 0?	R +?	R 0?	R 0?	R 0?	R 0?	R 0?	R 0?	R 0?
13. Transport	R -	R -	R --?	R -?	R -?	R -?	R --?	R -?	R -?	R +/-?	R -?	R -?
14. Greenhouse gas emissions	R +?	R +?	R +/-?	R +?	R +?	R +?	R +/-?	R +?	R +?	R +?	R -?	R -?

Summary of Findings for Minerals Resource and Minerals Infrastructure Safeguarding Options

- 5.48 This section summarises the SA findings for the minerals resource and minerals infrastructure safeguarding options. **Table 5.4** and **Table 5.5** summarise the scores from the full SA matrices for each policy option included in **Appendix 4**.

Minerals Resource Safeguarding Options

Minerals Safeguarding Policy Intention (for Sand and Gravel, Clay, Chalk, Consolidated Bedrock (Building Stone))

- 5.49 Mixed minor positive/minor negative effects are expected on half of the SA objectives from the policy intention for mineral safeguarding areas (MSAs), including SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 3 (local economy), 5 (landscape), 8 (historic environment), 13 (transport) and 14 (greenhouse gases). This is generally because MSAs may potentially restrict non-mineral developments that could themselves have negative effects on sensitive receptors such as communities, biodiversity, and 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. 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 on the specific nature and design of proposals that come forward within MSAs, which will not be known until the planning application stage.
- 5.50 Significant positive effects are expected for SA objectives 4 (conservation and supply of mineral resources) and 7 (geodiversity). This is due to the principle of safeguarding, which ensures that mineral resources will be protected from unnecessary sterilisation by other development, by ensuring that minerals resources will be adequately and effectively considered in all planning decisions. Due to these considerations, within 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.
- 5.51 In terms of ecosystem services, the potential impact on each of the relevant main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for the policy intention. For example, the policy intention is considered likely to have significant positive effects on SA objective 7 in relation to **Cultural** ecosystem services due to the potential ability to protect geodiversity.
- 5.52 Between two and three individual options for delineating MSAs and Mineral Consultation Areas (MCAs) for the following mineral resources have also been identified:
- Sand and gravel.
 - Clay.
 - Chalk.
 - Consolidated Bedrock (Building Stone).
- 5.53 The options generally propose:
- Safeguarding the entire known resource, safeguarding areas around existing and proposed sites, including buffer zones of 250m within the MSAs, and excluding urban areas from safeguarding areas.
 - Defining MCAs around the same areas as MSAs, defining MCAs around particular workings (e.g. brickworks that fall outside resource areas), and defining MCAs around existing active, dormant and inactive sites.
- 5.54 It is difficult to predict the SA effects of each of these options, as the same uncertainties exist with respect to whether non-minerals development proposals will come forward in any of these areas or if minerals extraction will occur prior to that development taking place. Therefore, the sustainability effects under any of the options are likely to be the same as described above for the MSA policy intention, 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 Chalk resource which stretches across the County west to east).

- 5.55 **It was recommended that 'excluding urban areas' is not included as part of the options considered**, as paragraph 4.2.10 of the BGS Mineral safeguarding in England: good practice advice²² states that:

"In urban areas, Mineral Planning Authorities (MPAs) should define MSAs to highlight the potential for extracting minerals beneath large regeneration projects and brownfield sites. Mineral development on such sites, particularly on the fringes of the urban areas, may be of economic advantage due to the availability of mineral on site for the development proposed, or the short distance to market if sold...If applicants for non-mineral development are not aware of the presence of a mineral resource below the surface when they are making planning applications, opportunities for prior extraction for some or all mineral resources may be missed. Defining MSAs in urban areas avoids disputes over the definition of what constitutes an urban area and reduced the need to amend MSAs to reflect urban expansion."

- 5.56 Excluding urban areas from MSAs so that non-minerals development in urban areas is not constrained by the presence of mineral resources is not in accordance with paragraph 143 of the NPPF. Furthermore, it is stated in some of the policy options that propose to exclude urban areas from MSAs (e.g. Options MSA/A2), that *"there is a risk associated with this option that, as the extraction of sand and gravel in urban areas subject to redevelopment would not be considered, a potentially high quality resource would not be worked"*. This statement in the policy option evaluation does not therefore accord with national policy (e.g. paragraph 143 of the NPPF), meaning that **in our view policy options MSA/A2, MSA/B2, MSA/C2 and MSA/D1 are not reasonable alternative options**. It is understood, however, that these options have been included to lessen the planning burden in terms of requiring developers within urban areas to consider whether a resource can be extracted prior to development and notification of the development to the authorities for comments. The options thereby attempt to avoid the need for consultation regarding planning applications for non-minerals development in urban areas which are already sterilised by existing development, or where mineral resources are highly unlikely to ever be developed. However, it is difficult to be certain that a mineral resource is unlikely to be developed even if there has been no interest from the minerals industry to date, as viability and market conditions change with time. Furthermore, any concerns regarding the number of planning applications that might be referred to the MPA as a consequence of defining MSAs in urban area can be managed by simple exemption criteria for minor developments (e.g. householder extensions), as outlined in paragraphs 5.2.3 – 5.2.8 in the BGS Mineral safeguarding in England: good practice advice²³.

Minerals Infrastructure Safeguarding Options

Oil and Gas – SMI/E1

- 5.57 Only one policy option (SMI/E1) was considered as a reasonable alternative option for safeguarding oil and gas production facilities. Mixed minor positive/minor negative effects are expected on nearly half of the SA objectives, including SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 3 (local economy), 5 (landscape), 8 (historic environment) and 13 (transport). This is due to the safeguarding of existing onshore hydrocarbon production facilities that could prevent other non-mineral related development from potentially harming sensitive receptors. Equally, safeguarding existing onshore hydrocarbon production facilities can promote minerals workings which in turn can have continued negative effects on sensitive receptors. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. However, most 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.

²² BGS (2011) Mineral safeguarding in England: good practice advice.

²³ BGS (2011) Mineral safeguarding in England: good practice advice.

- 5.58 The only significant positive effect identified is on SA objective 4 (mineral conservation) because this policy's aim is directly in line with that of the SA objective. The policy is unlikely to affect the remainder of the SA objectives.
- 5.59 In regards to ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for the policy intention. For example, the policy option is considered likely to have an uncertain minor positive effect on SA objective 6 (biodiversity) in relation to the Provisioning, Regulating and Cultural ecosystem services due to the potential ability to protect biodiversity.

Importation Infrastructure (Wharves)

- 5.60 Four reasonable alternative options were considered for wharf importation infrastructure:
- Option W1: Maintain current capacity by safeguarding all currently operational minerals wharves in West Sussex (2.27mtpa).
 - Option W2: Safeguard wharves in Eastern Harbour Arm at Shoreham and at Littlehampton (ARC Wharf, Halls Wharf, Turberville & Penneys, Railway Wharf) (1.95mtpa capacity).
 - Option W3: Safeguard wharves in the Eastern Harbour Arm at Shoreham and at Littlehampton (ARC Wharf, Halls Wharf, Turberville and Penneys Wharf, Railway Wharf) and seek safeguarding of potential wharf in Brighton and Hove (2.20mtpa)
 - Option W4: Safeguard wharves in the Eastern Harbour Arm at Shoreham and at Littlehampton (ARC Wharf, Halls Wharf, Turberville and Penneys Wharf, Railway Wharf) and seek safeguarding of potential wharves in Eastern Harbour Arm within both West Sussex and Brighton and Hove (2.29mtpa)
- 5.61 All four options are likely to have similar effects on the SA objectives due to the similar aims and wording of the policy options, with key differences regarding SA objective 3 (local economy). The only difference in the scores is due to policy option W1 being likely to have a significant positive and significant negative effect on SA objective 3, whereas policy options W2, W3 and W4 are likely to have a significant positive but minor negative effect. While all options will help safeguard minerals importation infrastructure from incompatible development and therefore have positive effects on economic development related to minerals, non-mineral developments may potentially be restricted by safeguarding importation infrastructure via these policy options, thereby potentially having negative effects on employment opportunities. Policy option W1 is likely to have significant negative effects as it involves identifying all wharves in West Sussex currently used for the landing of minerals and safeguarding them. While this option provides the most flexible approach in terms of the capacity safeguarded, it would inhibit the maximum amount of other development (such as housing) from coming forward at minerals wharves due to currently operational wharves being located on the Western Harbour Arm. This could lead to significant negative effects on the local economy as the ambition of the Shoreham Joint Area Action Plan (JAAP)²⁴ is for regeneration to take place on the Western Harbour Arm of Shoreham. Policy options W2, W3 and W4 are not expected to affect the regeneration plans of the JAAP, as the wharves safeguarded via these options will allow the aspirations of the JAAP to be met.
- 5.62 Mixed minor positive/minor negative effects are expected on many of the SA objectives, including SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 5 (landscape), and 8 (historic environment). This is generally due to the same reasons outlined above; that through safeguarding importation infrastructure, these policy options can restrict other non-minerals related development that may have minor negatives on the sensitive receptors identified in the SA objectives. However, minerals importation infrastructure and associated activities can themselves present negative effects on sensitive receptors. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place, if planning permission is sought and subsequently granted.
- 5.63 Minor positive effects are expected on SA objectives 6 (biodiversity), 10 (air quality), 13 (transport) and 14 (greenhouse gases). Safeguarding operational wharves, non-operational

²⁴ <http://www.shorehamharbour.com/joint-area-action-plan.php>

wharves and/or existing terminals will help safeguard importation infrastructure that will help to minimise the transport of minerals by roads, with associated reductions in air pollution and greenhouse gas emissions. The minor positive effects on biodiversity relate to the potential restriction of incompatible development in Safeguarding Areas that would prejudice importation infrastructure may in turn prevent development that could harm biodiversity. Significant positive effects are likely on SA objective 4 (minerals resources) as the importation capacities safeguarded will result in a surplus of capacity based on the highest demand for aggregates being landed at the wharves. Therefore providing sufficient capacity for a steady and adequate supply. Furthermore, safeguarding operational wharves, non-operational wharves and/or existing terminals will not be classed as inappropriate development, as they are contributing to the supply of mineral resources, not limiting the ability to extract or supply resources.

- 5.64 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for the policy options.

Importation Infrastructure (Railheads)

- 5.65 Two reasonable alternative options were considered for railhead importation infrastructure:
- Option RH1 – Maintain current capacity by safeguarding all currently operational railheads (1.22 mtpa).
 - Option RH2 – Increase capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads (for example Horsham Sidings).
- 5.66 Both policy options are expected to have almost identical effects to the alternative options considered for wharf importation infrastructure, as outlined above. This is because the options are very similar in what they aim to achieve, which is to safeguard importation infrastructure and required import capacity to ensure that West Sussex can maintain an adequate and steady supply of minerals.
- 5.67 Like the wharf policy options, both policy options RH1 and RH2 are likely to have a significant positive effect on SA objective 4 (mineral conservation). This is because both policy aims are to ensure that no inappropriate development occurs which could compromise the transportation of minerals by rail in West Sussex.
- 5.68 Similar to the policy options for wharves, policy options RH1 and RH2 have differences in their mixed score for SA objective 3 (local economy). The difference in the scores is due to policy option RH1 being likely to have significant positive but minor negative effects (like policy options W2, W3 and W4), and policy option RH2 having significant positive but significant negative effects (like policy option W1). While both options will help safeguard importation infrastructure from incompatible development and therefore have positive effects on economic development related to minerals, non-mineral developments may potentially be restricted by safeguarding importation infrastructure via these policy options, thereby potentially having negative effects on employment opportunities. Policy option RH2 is likely to have significant negative effects as it supports increasing capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads. This may result in restricting more non-minerals development than policy option RH1 which may result in greater impacts on the local economy.

Other production infrastructure

- 5.69 Two reasonable alternative options were considered for other production infrastructure:
- Option PI1: Safeguard all existing and planned sites for concrete batching, the manufacture of coated materials, and other concrete products.
 - Option PI2: Safeguard any existing and planned sites for concrete batching, the manufacture of coated materials, and other concrete products and the handling, processing and distribution of substitute (other than secondary and recycled) aggregate material which are not located in the National Park.
- 5.70 Options PI1 and PI2 have similar effects on the SA objectives due to the similar aims and wording of the policy options, with the difference being PI2 does not safeguard sites in the South Downs National Park. The only difference in effect is therefore on SA objective 5 (landscape) where both policies are expected to have mixed effects but PI1 is an uncertain minor positive and minor

negative effect, whereas PI2 is expected to have an uncertain significant positive and a minor negative effect. This is because PI2 would help to ensure that impacts on the South Downs National Park would be reduced and may be avoided, as the policy option does not propose to safeguard infrastructure within the National Park.

- 5.71 Mixed minor positive/minor negative effects are expected on nearly half of the SA objectives, including SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 3 (local economy), 5 (landscape), 8 (historic environment) and 13 (transport). This is generally due to the same reasons outlined above; that through safeguarding existing and planned sites, these policy options can restrict other non-minerals related development that may have minor negatives on the sensitive receptors identified in the SA objectives. However, minerals infrastructure and associated production activities can themselves present negative effects on sensitive receptors thereby explaining the reasons for mixed effects. The uncertainty associated with the effects is because the potential for effects will depend on the exact nature and design of other production infrastructure within safeguarding areas. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure will be automatically allowed or that non-mineral development cannot take place.
- 5.72 Significant positive effects are also expected for SA objective 4 (conservation and supply of mineral resources) and as part of the mixed effects for SA objective 3 (local economy) due to the principle of safeguarding ensuring that mineral production infrastructure will be protected from non-mineral development, and that minerals and associated infrastructure are essential to support sustainable economic growth.
- 5.73 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for the policy options. For example, policy option PI2 is considered likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 5) in relation to **Cultural** ecosystem services due to the potentially ability to protect landscape character.

Adoption of recommendations relating to the Policy Options

- 5.74 **Table 5.6** was prepared by WSCC and SDNPA to show how the SA Recommendations (made in the above sections in **bold text**) have been addressed in the Draft JMLP (April 2016).

Table 5.4: Summary of SA scores for the minerals resource and minerals infrastructure safeguarding options

SA Objective	MSA Policy Intention	SMI/E1	W1	W2	W3	W4	RH1	RH2	PI1	PI2
1. Health, well-being and amenity	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?
2. Recreation	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?
3. Local economy	++/-	++/-	++/--	++/-	++/-	++/-	++/-	++/-	++/-	++/-
4. Minerals resources	++	++	++	++	++	++	++	++	++	++
5. Landscape	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	++/-?
6. Biodiversity	+	+	+	+	+	+	+	+	+	+
7. Geodiversity	++?	0	0	0	0	0	0	0	0	0
8. Historic environment	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?
9. Soil quality	0	0	0	0	0	0	0	0	0	0
10. Air quality	0	0	+	+	+	+	+	+	+/-?	+/-?
11. Water resources and quality	0	0	0	0	0	0	0	0	0	0
12. Flooding	0	0	0	0	0	0	0	0	0	0
13. Transport	+/-?	+/-?	+	+	+	+	+	+	+/-?	+/-?
14. Greenhouse gas emissions	0	0	+	+	+	+	+	+	+/-?	+/-?

Table 5.5: Summary of possible benefits or impacts on the four main ecosystem services for the minerals resource and minerals infrastructure safeguarding options

SA Objective	MSA Policy Intention	SMI/E1	W1	W2	W3	W4	RH1	RH2	PI1	PI2
1. Health, well-being and amenity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Recreation	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?
3. Local economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Minerals resources	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -
5. Landscape	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?
6. Biodiversity	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?
7. Geodiversity	C ++?	C 0	C 0	C 0	C 0	C 0	C 0	C 0	C 0	C 0
8. Historic environment	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?
9. Soil quality	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
10. Air quality	R 0	R 0	R +?	R +?	R +?	R +?	R +?	R +?	R +/-?	R +/-?
11. Water resources and quality	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
12. Flooding	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0	R 0
13. Transport	R +/-?	R +/-?	R +?	R +?	R +?	R +?	R +?	R +?	R +/-?	R +/-?
14. Greenhouse gas emissions	R 0	R 0	R +?	R +?	R +?	R +?	R +?	R +?	R +/-?	R +/-?

Table 5.6: Summary of how the SA Recommendations on the Policy Options were addressed by the Draft JMLP (April 2016)

SA recommendation	Authorities' Response
<i>Sharp Sand and Gravel (supply)</i>	
<p>Para 1.4: Although this does not affect the SA findings, it is recommended that this policy option and any resulting policy does not refer to minerals 'safeguarding', instead focuses on minerals supply, as minerals safeguarding is addressed in separate policy options.</p>	Reference to safeguarding not taken forward in the draft supply policy.
<p>With respect to the following policy options:</p> <ul style="list-style-type: none"> Option SSG1 – Maintain supplies from existing permitted reserves of sharp sand and gravel. Option SSG2 – Allow windfall sites to come forward in certain circumstances. <p>Para 1.7: While the JMLP does not need to identify additional sites for sharp sand and gravel, policy option SSG1 ensures that existing supplies can be maintained over the plan period. However, it is recommended that policy options SSG1 and SSG2 be combined such that the policy includes the criteria in SSG2, as this could provide added security to the maintenance of supply and flexibility in the plan to allow potential 'windfall' sites to come forward should the existing permitted reserves become constrained for any unforeseen circumstances. This may therefore increase the sustainability of the approach to the supply of sharp sand and gravel in the JMLP.</p>	<p>Draft Policy M1 includes criteria for windfall sand and gravel extraction proposals.</p> <p>Draft policy M8 (Safeguarding) clause (a) seeks to safeguard the supplies from existing permitted reserves.</p>
<i>Soft Sand (Supply)</i>	
<p>Para 1.8: Given that the deliverability of extracting additional soft sand from the limited resource outside of the SDNP is uncertain due to a lack of information concerning viability and landowner intentions, it is possible that imports of soft sand may be more likely to occur than development of new extraction sites within West Sussex. Therefore, it is recommended that this policy option explicitly take a hierarchical approach to soft sand provision, by clearly prioritising supply from existing permitted reserves first and not allocating extensions or additional sites in the SDNP, then identifying additional allocations/areas of search beyond the SDNP, and finally allowing imports from outside the County if required. In addition, it is recommended the policy specifies that where imports are allowed, priority should be given to those that can be delivered via non-road transport modes.</p>	<p>This is addressed in policies within the draft Plan, specifically:</p> <p>Policy M2 – includes strategic approach to supply of soft sand and directly addresses some of these recommendations.</p> <p>Policy M8 (a) – safeguards soft sand existing sites.</p> <p>Policy M8(b) – safeguards the soft sand resource.</p>

SA recommendation	Authorities' Response
	<p>Policy M9 – safeguards infrastructure which may be used to import soft sand (wharves and railheads).</p> <p>Policy M10 – allocates an additional soft sand site (Ham Farm) in West Sussex but beyond the SDNP.</p> <p>There are no allocations of extensions or additional soft sand sites in the SDNP.</p>
<p>Para 1.10: Although this does not affect the SA findings, it is recommended that this policy option and any resulting policy does not refer to minerals 'safeguarding' and focuses on minerals supply, as minerals safeguarding is addressed in separate policy options.</p>	<p>Reference to safeguarding not taken forward in the draft supply policy.</p>
<p><i>Secondary and Recycled Aggregate – SRA1</i></p>	
<p>Para 1.14: The inclusion of such a policy option in its current wording would not have a direct effect on the supply of secondary/recycled aggregate as there is no mechanism in the policy option's wording to support this. It is therefore recommended that the wording of the policy option is changed along the lines of 'supporting the supply of secondary and recycled aggregates and their processing sites in accordance with proposed development management policies (e.g. Plant, processing and secondary activities), minerals infrastructure safeguarding options and policies included in the West Sussex Waste Local Plan (e.g. Policies W1, W4 and W10)'.</p>	<p>The supply of secondary and recycled aggregate is principally support through policies in the Waste Local Plan. This is mentioned in para 8.15.5 but it is not considered that specific reference to the WLP policies is needed within an MLP policy.</p> <p>Safeguarding of related Infrastructure is covered by Policy M9.</p>
<p><i>Minerals Resource Safeguarding Options</i></p>	
<p>Para 1.40: It is recommended that 'excluding urban areas' is not included as part of the options considered, as paragraph 4.2.10 of the BGS Mineral safeguarding in England: good practice advice²⁵ states that:</p> <p><i>"In urban areas, Mineral Planning Authorities (MPAs) should define MSAs to highlight the potential for extracting minerals beneath large regeneration projects and brownfield sites.</i></p>	<p>Noted. NPPF states that MPAs should <i>"define Minerals Safeguarding Areas and adopt appropriate policies in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development, whilst not</i></p>

²⁵ BGS (2011) Mineral safeguarding in England: good practice advice.

SA recommendation	Authorities' Response
<p><i>Mineral development on such sites, particularly on the fringes of the urban areas, may be of economic advantage due to the availability of mineral on site for the development proposed, or the short distance to market if sold...If applicants for non-mineral development are not aware of the presence of a mineral resource below the surface when they are making planning applications, opportunities for prior extraction for some or all mineral resources may be missed. Defining MSAs in urban areas avoids disputes over the definition of what constitutes an urban area and reduced the need to amend MSAs to reflect urban expansion."</i></p>	<p><i>creating a presumption that resources defined will be worked".</i></p> <p>It is not considered that the exclusion of urban areas is necessarily contrary to national policy and, on this basis, it is considered that these options constitute reasonable alternatives.</p>
<p>Para 1.41: Excluding urban areas from MSAs so that non-minerals development in urban areas is not constrained by the presence of mineral resources is not in accordance with paragraph 143 of the NPPF. Furthermore, it is stated in some of the policy options that propose to exclude urban areas from MSAs (e.g. Options MSA/A2), that <i>"there is a risk associated with this option that, as the extraction of sand and gravel in urban areas subject to redevelopment would not be considered, a potentially high quality resource would not be worked"</i>. This statement in the policy option evaluation does not therefore accord with national policy (e.g. paragraph 143 of the NPPF), meaning that in our view policy options MSA/A2, MSA/B2, MSA/C2 and MSA/D1 are not reasonable alternative options. It is understood, however, that these options have been included to lessen the planning burden in terms of requiring developers within urban areas to consider whether a resource can be extracted prior to development and notification of the development to the authorities for comments.</p>	<p>It is not considered that the exclusion of urban areas is necessarily contrary to national policy and, on this basis, it is considered that these options constitute reasonable alternatives.</p>

Development Management Draft Policy Options (for the Regulation 18 Draft JMLP)

- 5.75 The fourteen Development Management (DM) draft policy options are generally supportive of the SA objectives and ecosystem services as shown by the number of minor and significant positive scores illustrated in **Table 5.7** and **Table 5.8**. This section summarises the SA findings in relation to the social, economic and environmental objectives. **Appendix 5** includes the full SA matrices for each DM Policy.

Social SA objectives

- 5.76 Overall, the DM policies are likely to have a positive effect on SA objectives 1 (health, well-being and amenity of residents) and 2 (recreation). Most of the DM policies are likely to have a positive effect on SA objective 1, with two policies expected to have significant positive effects. The Public Amenity and Health policy has a significant positive effect given that the policy aim is directly in line with the SA objective. The biodiversity and geodiversity policy also has a significant positive effect because in addition to benefiting the environment, biodiversity can bring recreational, aesthetic and health benefits to a community. These positive effects would also benefit the **Cultural, Provisioning** and **Regulating** ecosystem services.
- 5.77 The Public Amenity and Health policy also has a significant positive effect on SA Objective 2, as it seeks to safeguard recreational opportunities such as open spaces and Public Rights of Way. This policy would also benefit the **Cultural** ecosystem services.
- 5.78 There are however, two uncertain minor negative effects identified for the social SA objectives, both deriving from the Plant, Processing and Secondary Activities DM policy. The minor negative scores are identified because this policy allows for additional secondary mineral processing and/or ancillary activities within mineral extraction sites, which could affect local amenity and recreation areas due to noise, dust and visual impacts. Furthermore, the key challenge the DM policy aims to address includes the protection of public amenity; however, the policy does not specifically include any measures that would protect public amenity, apart from criteria (d) which requires proposals to be consistent with other policies of the development plan. Therefore, minor negative effects are expected for the social SA objectives. However, the minor negative effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.

Economic SA objectives

- 5.79 The majority of effects are negligible on the economic objectives and ecosystem services as the DM policies focus mainly on reducing potential environmental and social impacts of minerals development. SA objective 3 (local economy) could have a minor positive effect from the Aerodrome Safeguarding DM policy as it ensures that minerals working does not have adverse impacts on airports/airfields/aeroplanes or their operational integrity. DM policies Plant, Processing and Secondary Activities, and Restoration of Quarries are also likely to have minor positive effects on SA objective 3 (local economy) as processing and ancillary activities support a wide range of end uses and industries that contribute to the supply of material and therefore support sustainable economic growth. The restoration of quarries will also have positive effects as restoration schemes and after uses may benefit the local economy in the long term.
- 5.80 In contrast, the Cumulative Impacts policy is expected to have a minor negative effect on SA objective 3 as the policy does not specifically refer to the potential for cumulative impacts on businesses despite stating this in the issue that this policy is trying to address.
- 5.81 A mixed minor positive and negative effect is identified for SA objective 4 (conservation and supply of mineral resources) from the Plant, Processing and Secondary Activities DM policy. Secondary mineral processing and/or ancillary activities will not be a form of inappropriate development as they will contribute to the supply of minerals and as such a minor positive effect is identified. However, the policy indirectly supports the extraction and processing of primary minerals to supply ancillary activities and so a minor negative effect is also identified. This same policy could therefore have a minor negative effect on the **Supporting** ecosystem services, as

minerals contribute to soil formation and nutrient cycling, and extracting these minerals would therefore have negative impacts.

Environmental SA objectives

- 5.82 Similar to the social SA objectives, the DM policies are likely to have an overall positive effect on the SA objectives and ecosystem services. There are however, seven minor negatives expected, six of which are identified for the Plant, Processing and Secondary Activities DM policy, because, as explained above in the social section, this policy allows for additional processing and ancillary infrastructure development within mineral extraction sites, which could result in noise, dust and visual impacts with potential negative effects on SA objectives 5 (landscape), 6 (biodiversity), 8 (historic environment), 10 (air quality), 13 (transport) and 14 (greenhouse gases). The proposed policy also does not refer to any specific mitigation measures, apart from criteria (d) of the policy which requires proposals to be consistent with other policies of the development plan which will help mitigate the minor negative effects. Therefore, recommendations for this policy have been suggested in the Recommendations section below.
- 5.83 Most of the DM policies are expected to have positive effects on SA objective 5 (landscape), with four policies having significant positive effects (the Character, Landscape, Historic Environment and Design and Operation of Mineral Developments DM policies). As the Character and Landscape policy aims align directly with this SA objective (i.e. both are seeking to protect, and where possible, enhance the landscape), a significant positive score is expected. The significant positive effect on SA objective 5 from the Historic Environment DM policy is due to the close relationship between the historic environment and the landscape character of West Sussex and the South Downs National Park. As the Historic Environment policy aims to conserve and where possible enhance heritage assets, the historic environment and landscape character should be protected. The Design and Operation of Mineral Developments DM policy considers the scale, form, and layout (including landscaping) of a proposed minerals development which should help to reduce potential impacts on local landscape character including skyline and topography. These positive effects would also benefit the **Cultural** ecosystem services.
- 5.84 The seven remaining significant positive effects in the Environmental section are due to the Historic Environment, Air, Soil and Water, Biodiversity and Geodiversity, Flooding, Transport and Design and Operation of Mineral Developments DM policies being directly applicable to SA objectives 6, 8, 10, 11, 12, 13 and 14.
- 5.85 Five uncertain effects have been identified, four of which are from the Restoration of Quarries DM policy, which is generally likely to have a positive effect on the environment, but two uncertainties have been identified because the proposed policy option does not specifically mention geodiversity (SA objective 7) or soil protection and enhancement (SA objective 9). The uncertainties relating to water resources (SA objective 11) and flooding (SA objective 12) are due to not knowing the type of restoration proposed, which cannot be determined at this stage. The latter reason is echoed in the uncertain score given for SA objective 11 under the Plant, Processing and Secondary Activities DM policy.

Recommendations for the Draft Development Management Policies (for the Regulation 18 Draft JMLP)

- 5.86 Through considering the potential effects of the draft Development Management Policies on the SA objectives and ecosystem services, this section outlines recommendations regarding presentational factors, addresses the identified minor negative and solely uncertain effects and advises on how the issue of climate change can be further addressed.

Presentational recommendations

- 5.87 The recommendations highlighted in this sub-section are unlikely to change the effects on SA objectives but rather make the policies easier to understand:
- The **Air, Soil and Water DM policy** is quite lengthy and reads as two policies as there is a clear split between air and soil in the first section and water in the second section. It is

therefore recommended that this policy is divided into two policies, rather than just being one, such that there would be an Air and Soil DM policy and an additional Water Quality DM policy.

- Similarly, the **Design and Operation of Mineral Developments DM policy** contains a long list of criteria with a defined distinction between the 'design' and 'operational' aspects of the policy. As such, it is recommended that this policy option is to be split into two policies rather than one; a Design DM policy and an Operational DM policy.

Adoption of the Recommendations

- 5.88 The Draft Plan has taken forward the Air, Soil and Water recommendation by splitting the policies into two: M15: Air and Soil and M16 Water Resources. The Draft Plan has also addressed the Design and Operation of Mineral Developments DM policy through removing the operational section from the wording of Policy M23 and inserting it in the supporting text.

Addressing specific sustainability effects

- 5.89 The current policy approach in the **Historic Environment DM policy** does not refer to the consideration of the setting of historic assets. It is recommended that the consideration of setting is included in the criteria of this policy (as highlighted in para 129 in the NPPF).
- 5.90 It is recommended that soil quality and water quality are added to criterion 'c' of the **Restoration of Quarries DM policy** as uncertain effects have been identified for the relevant SA objectives due to these issues not being included. These additions to the policy could result in the identified effects becoming minor positive (+).
- 5.91 The wording in the **Cumulative Impacts policy** is somewhat vague and so requires assumptions to be made in its interpretation, which can be avoided: Firstly, the policy currently states "unreasonable level of disturbance" and it is recommended that the policy specifically states what these disturbances are, such as noise, odour, and increased traffic for example. Secondly, the policy states "and/or local communities" which is presently being assumed to cover residents, businesses and visitors in West Sussex, it is recommended that 'local communities' is replaced with 'residents, businesses and visitors'.
- 5.92 It is recommended that the **Biodiversity and Geodiversity DM policy** includes geodiversity in criterion 'e', as mineral sites have the potential to protect, conserve, enhance and manage geological features as they can be of educational interest for example.
- 5.93 The **Plant, Processing and Secondary Activities DM policy** aims to address the key challenge of protecting public amenity and the issue of protecting and, where possible, enhancing the unique landscape and townscape character of West Sussex and the South Downs National Park. However, the policy does not include any specific measures that would address these challenges/issues, apart from criteria 'd' which requires proposals to be consistent with other policies of the development plan. Therefore, it is recommended that criteria are included in the policy to specifically address these challenges/issues, examples could include:
- the design, size and location is, as far as practicable, in keeping with the landscape character of the surrounding area, and;
 - the proposal does not have a significantly adverse impact on the amenity of adjacent land-uses.
- 5.94 If these measures were to be incorporated, additional mitigation would be provided by the policy potentially resulting in the identified minor negative effects (e.g. on SA objectives 1 (health, well-being and amenity of residents), 2 (recreation) and 5 (landscape)) being scored as uncertain minor positive effects (+?).

Adoption of the Recommendations

- 5.95 The Historic Environment DM Policy has been reconfigured to make it consistent with the Waste Local Plan and while it does not specifically address the 'setting' of historic assets within the policy, reference is made to how this will be taken into consideration within the supporting text.
- 5.96 Soil quality and water quality references are still omitted from the Restoration of Quarries policy (M23), however, clause c) does refer to 'wider environmental objectives'. Conversely, the two

recommendations identified in the Cumulative Impacts DM Policy have been taken forward in Policy M22.

- 5.97 The recommendation for the Biodiversity and Geodiversity DM Policy has been included in criterion 'd', which states that geodiversity should be created enhanced, and managed where appropriate.
- 5.98 The Plant, Processing and Secondary Activities policy has been moved from the DM section to Strategic Policies and the Mineral Processing and Ancillary Activities section and is now Policy M8. Although the policy wording has been tweaked, it has not taken forward either landscape or amenity recommendation. The supporting text however mentions that secondary processing activities that are independent of extraction will be subject to separate DM policies, which include M12: Character, M13: Protected Landscape and M18: Public health and amenity.

Absence of a climate change policy

- 5.99 It is acknowledged that climate change is addressed in the plan as a common thread through other DM policies, and the Vision and Strategic Objectives. However, to help further address the issue of climate change it is recommended that the Transport DM policy also encourages sustainable transport solutions for employees traveling to sites. This is recommended as while it is acknowledged that the policy encourages the use of rail and water for the transportation of minerals; it neglects to address modes of transport for employees working on mineral sites.

Adoption of the Recommendation

- 5.100 This recommendation has not been taken forward by Policy M18, however, the supporting text does state: "A Transport Assessment and Travel Plan will be required for the majority of minerals proposals".

Table 5.7: Summary of SA findings for the Draft Development Management Policies

DM Policies SA objectives	Character	Landscape	Historic Environment	Air, Soil and Water Quality	Biodiversity and Geodiversity	Public Amenity and Health	Flooding	Transport	Aerodrome Safeguarding	Cumulative Impact	Design and Operation of Mineral Developments	Plant, processing and secondary activities	Restoration of Quarries	Community Benefits and Engagement
Social														
1. Health, well-being and amenity of residents	+	+	0	+	++	++	+	+	0	+	+	-?	+	+
2. Recreation	+	+	0	0	+	++	0	0	0	+	+	-?	+	0
Economic														
3. Local economy	0	0	0	0	0	0	0	0	+	-	0	+	+	0
4. Conservation and supply of mineral resources	0	0	0	0	0	0	0	0	0	0	0	+/-	0	0
Environmental														
5. Landscape	++	++	++	+	+	0	+	+	0	+	++	-?	+	0
6. Biodiversity	+	+	0	+	++	+	+	+	0	+	+	-?	+	0
7. Geodiversity	0	0	0	0	+	0	0	0	0	+	+	0	?	0
8. Historic Environment	+	+	++	+	0	+	0	+	0	+	+	-?	+	0
9. Soil	0	0	0	+	0	0	0	0	0	+	+	0	?	0
10. Air quality	0	0	+	++	0	+	0	+	0	+	+	-?	0	0
11. Water resources and water quality	0	0	0	++	0	0	+	0	0	+	+	?	?	0

12. Flooding	0	0	0	+	0	0	++	0	0	+	+	0	?	0
13. Transport	0	0	+	0	0	+	0	++	0	+	-	-?	0	0
14. Greenhouse gases	0	0	0	0	0	0	0	+	0	+	++	-?	0	0

Table 5.8: Summary of potential impacts on ecosystem services for the Draft Development Management Policies

DM Policies	Character	Landscape	Historic Environment	Air, Soil and Water Quality	Biodiversity and Geodiversity	Public Amenity and Health	Flooding	Transport	Aerodrome Safeguarding	Cumulative Impact	Design and Operation of Mineral Developments	Plant, processing and secondary activities	Restoration of Quarries	Community Benefits and Engagement
SA objectives														
Social														
1. Health, well-being and amenity of residents	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Recreation	C+	C+	C0	C0	C+	C++	C0	C0	C0	C+?	C+	C-?	C+?	C0
Economic														
3. Local economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Conservation and supply of mineral resources	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-
Environmental														
5. Landscape	C++	C++	C++	C+	C+	C0	C+	C+?	C0	C+	C++	C-?	C+?	C0
6. Biodiversity	P +	P +	P 0	P +	P ++	P +	P +	P +?	P 0	P +	P +	P -?	P +?	P 0
	R +	R +	R 0	R +	R ++	R +	R +	R +?	R 0	R +	R +	R -?	R +?	R 0
	C +	C +	C 0	C +	C ++	C +	C +	C +?	C 0	C +	C +	C -?	C +?	C 0
7. Geodiversity	C0	C0	C0	C0	C+	C0	C0	C0	C0	C+	C+?	C0	C?	C0
8. Historic Environment	C+	C+	C++	C+	C0	C+	C0	C+?	C0	C+?	C+	C-?	C+?	C0
9. Soil	R0	R0	R0	R+	R0	R0	R0	R0	R0	R+	R+	R0	R?	R0
10. Air quality	R0	R0	R+	R++	R0	R+	R0	R+	R0	R+	R+	R-?	R0	R0

11. Water resources and	R0	R0	R0	R++	R0	R0	R+	R0	R0	R+	R+	R?	R?	R0
12. Flooding	R0	R0	R0	R+?	R0	R0	R++	R0	R0	R+	R+	R0	R?	R0
13. Transport	R0	R0	R+?	R0	R0	R+	R0	R++	R0	R+	R-	R-?	R0	R0
14. Greenhouse gases	R0	R0	R0	R0	R0	R0	R0	R+	R0	R+	R++	R-?	R0	R0

Potential Mineral Site Options (for the Regulation 18 Draft JMLP)

Summary of Findings for Site Options

- 5.101 This section summarises the SA findings in relation to the social, economic and environmental objectives for the Site Options. **Tables 5.9** and **5.10** summarise the scores from the full SA matrices for each Site Option included in **Appendix 7**. A map showing the location of the potential mineral Site Options is presented in **Figure 5.1** at the end of this chapter.

Social Objectives

SA Objective 1 (Health and local amenity)

- 5.102 All of the potential mineral extraction sites could have **minor negative, uncertain effects** on SA Objective 1 as most of these sites are within 100m of sensitive receptors, in particular residential properties and businesses. This was the case for sites at Chantry Lane Extension, Ham Farm, Land adjacent to West Hoathly Brickworks, Minsted West, Severals West, Horncroft, Brick Kiln Farm, Buncton Manor Farm and sites within the Hambrook Grouping area. Therefore, development at these sites has the potential to have a minor negative effect on the health and amenity of local residents and employees, because all minerals development would result in some level of dust, noise, vibration and light pollution during site preparation, operation and restoration and associated with transport of minerals from the site. This is also likely to be the case for development at the land adjacent to the western area of Rock Common, where the presence of Washington Caravan & Camping Park led to the minor negative effect. However, the site at East of West Heath Common is not likely to have an effect on health and local amenity as it is over 100m from sensitive receptors. Despite this, it was scored as having a minor negative, uncertain effect, due to the fact that it is an extension to West Heath Quarry and therefore likely to result in cumulative effects on the amenity of the local community of Nyewood. All but two of the potential mineral sites (Horncroft and Ham Farm) are also close to other existing mineral or waste sites, or allocated waste sites in the West Sussex Waste Local Plan, which are all within 1km of the same settlement and the potential for cumulative effects on the local community, were also identified.
- 5.103 In addition, a number of the potential mineral sites are in close proximity to areas planned for future residential development (in Local Plan documents), and the minor negative effects identified for this objective also relate to the potential for land use conflict where planned residential use is close to the minerals sites.
- 5.104 However, the SA has assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented as a result of the development management policies that are likely to be included in the Minerals Local Plan should be sufficient to avoid any potential long term effects on health and local amenity.
- 5.105 In terms of ecosystem services, protection of health and well-being would be supported by all four of the categories of ecosystem services, but the effects identified for SA Objective 1 are unlikely to have a direct impact or benefit on the ecosystem services.

SA Objective 2 (Recreation)

- 5.106 Some negative effects on recreation have been identified for almost all of the potential mineral sites; ten of the sites could have a **minor negative effect** on SA Objective 2, while three of the sites could have a **significant negative effect** (Rock Common, Severals West and Woodmancote). Most of the sites scoring a minor negative effect were due to the presence of Public Rights of Way (PRoW) within 250m of the site. This was the case for Buncton Manor Farm Common Road West, Ham Farm, Land Adjacent to West Hoathly Brickworks and East of West Heath Common. At Minsted West, and Horncroft and Chantry Lane Extension, the proximity of commons, parks and the Serpent Trail as well as PRoW led to a minor negative effect. Significant negative effects were identified owing to the presence of PRoW and/or the Serpent Trail crossing the Rock Common, Severals West and Woodmancote sites. At Woodmancote, two (Public Bridleway no.250 and Public Footpath no.252) were identified. Therefore, all of these sites scored are considered likely to have negative effects on the amenity of users of PRoW, AONB and long distance trails, and other users of the countryside in the County, as minerals development would

mean either removing part of a facility/open space, or removing or temporarily closing land which has potential for recreation/access to the countryside.

- 5.107 Common Road East could have a **minor positive effect**, due to no PRoW or recreational facilities being found within 250m of this site, while the two remaining sites (Brick Kiln Farm and Funtington West) could have a **mixed (significant positive and minor negative) effect**. Both sites were found to be within 250m of an existing PRoW and therefore scored a minor negative effect. However, the WSCC/SDNPA site assessment also found there was potential for the creation of new PRoWs as part of the application process and therefore these sites also received a significant positive effect.
- 5.108 In terms of ecosystem services, protection of recreational assets would benefit the **Cultural** ecosystem services. Therefore, those sites with potential negative effects identified on SA Objective 2 above, are also likely to have a negative effect on Cultural ecosystem services. Conversely, the three sites that could have a minor or significant positive effect could also benefit the Cultural ecosystem services (Common Road East, Brick Kiln Farm and Funtington West).

Economic Objectives

SA Objective 3 (Local economy)

- 5.109 The majority of the potential minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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. Furthermore, certain sites (e.g. Land Adjacent to West Hoathly Brickworks) are extensions to existing sites, and there may not be a net increase in employment but a continuation in employment. However, due to the likely job creation directly associated with new mineral extraction sites, the majority of sites are likely to have **minor positive effects** on SA objective 3, irrespective of their location.
- 5.110 The potential mineral sites at Rock Common and Bunton Manor Farm could have the potential for a mixed effect including a **minor negative effect** as it is within the Shoreham Airport aeronautical safeguarding zone for bird strike. Therefore, if either site were restored to a water-based use, they could affect the safe operating of the airport, as this would be likely to attract large numbers of birds and increase the risk of bird strike. However, this effect is uncertain as it is dependent on the type of restoration proposed at these sites if they were to come forward.
- 5.111 In terms of ecosystem services, protection of the local economy would be supported in particular by **Provisioning** ecosystem services, but development of any of the potential mineral sites is unlikely to have a particular impact or benefit on the Provisioning ecosystem services.

SA Objective 4 (Conservation of mineral resources)

- 5.112 New potential mineral sites are not classed as inappropriate development with respect to sterilisation of 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 or nearby. However, allocation of all of the potential mineral sites would have a **minor positive effect** on this objective as allocation would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.
- 5.113 In terms of ecosystem services, conserving mineral resources from inappropriate development whilst providing for the supply of minerals would not benefit **Supporting** ecosystem services, as minerals contribute to soil formation and nutrient cycling and extracting these minerals would therefore have negative impacts.

Environmental Objectives

SA Objective 5 (Landscape)

- 5.114 The majority of site options have the potential to have a negative effect on designated landscapes, as they are within or adjacent to the South Downs National Park or the High Weald

AONB (Land adjacent to West Hoathly Brickworks). Seven sites could have a **minor negative effect** as they are judged as having an overall landscape sensitivity to mineral extraction of 'medium' or 'low-medium' in the Landscape Sensitivity and Capacity Study (LUC 2015 Addendum or the SDNPA 2015 Supplement).

- 5.115 Six site options could have a **significant negative effect** (Land adjacent to West Hoathly Brickworks, Minsted West, Severals West, Horncroft, Buncton Manor Farm and Funtington West), as they have been judged as having 'high' or 'medium-high' sensitivity in the LUC 2015 Addendum or the SDNPA 2015 Supplement. The only exception is Brick Kiln Farm, which is to the south west of Chichester (separated by the A27) is not in either the National Park or AONB and had an overall landscape sensitivity judgement of 'low' and is therefore **unlikely to have any effect** on designated landscapes, local landscape character or tranquillity.
- 5.116 Protection of landscape character would benefit the **Cultural** ecosystem services. Therefore, all of the sites except Brick Kiln Farm, are also likely to have a negative effect on Cultural ecosystem services.

SA Objective 6 (Biodiversity)

- 5.117 All of the site options have the potential to have a negative effect on biodiversity, as they could affect one or more international, national or local designated nature conservation sites or BAP Priority Habitats or rare species. The majority (11) sites could have a **significant negative effect** as they either contain or are within 250m of one or more national or local designated nature conservation sites, including SSSIs, SNCIs, National Nature Reserves, Ancient Woodland, Local Wildlife Sites or BAP priority habitats and/or the WSCC/SDNPA site assessment notes there is the potential for adverse effects on biodiversity.
- 5.118 The remaining five site options could have a **minor negative effect** on biodiversity (Rock Common, East of West Heath Common, Woodmancote, Buncton Manor Farm and Slades Field), as they are either between 250m and 1km of one or more national or local designated nature conservation sites or BAP priority habitats and/or the WSCC/SDNPA site assessment notes there is the potential for adverse effects on species on the Rare Species Inventory and the site is of ecological value as it provides support to rare breeding birds, and a sand martin colony.
- 5.119 However, all of these effects would be uncertain as the potential for effects on biodiversity will depend on the exact nature and design of new sites, and many effects could be adequately mitigated through implementation of good operational practices, and requiring certain surveys or detailed assessments to be undertaken as part of the planning application process. These requirements will need to be included within policies in the JMLP and within specific site development briefs for the sites to be allocated.
- 5.120 There may also 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. Again, this would be very dependent on the exact nature and proposed design of the planned mineral site, and specific requirements could be included within the JMLP policies and site development briefs.
- 5.121 Protection of biodiversity would benefit the **Provisioning, Regulating** and **Cultural** ecosystem services. Therefore, all of the sites are also likely to have a negative effect on these three ecosystem services.

SA Objective 7 (Geodiversity)

- 5.122 The majority of the sites are expected to have **no effect** on SA objective 7 as they are more than 500m from a national site of geological interest (SSSI) or Local Geological Site. Four sites (Rock Common, Land Adjacent to West Hoathly Brickworks, Buncton Manor Farm and Chantry Land Extension) have the potential to have a **minor negative effect** as they are within 500m of a national site of geological interest (SSSI) or Local Geological Site. In these sites, there is the potential to damage or remove the geological interest through excavation practices. However, it should be noted that all potential negative effects would be dependent on the exact nature, working and proposed design of the restoration of the minerals, which would not be known until the planning application stage.

- 5.123 Protection of geodiversity would benefit the **Cultural** ecosystem services. Therefore, those sites with potential negative effects identified on SA Objective 7 above, are also likely to have a negative effect on Cultural ecosystem services.

SA Objective 8 (Historic environment)

- 5.124 The majority of site options have the potential to have a **minor negative effect** on SA Objective 8, 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. The only exception to this was at the Woodmancote site in the Hambrook Grouping, where the LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having a cultural heritage sensitivity of 'low', although the Study considers that the setting of the Woodmancote Farmhouse may be affected by workings on this site. This assessment assumes that the farm would be retained. Furthermore, as a result of the lie of the land and existing screening, there is no intervisibility between the site and the two Conservation Areas at Westbourne and Funtington.
- 5.125 Nonetheless as with most of the potential mineral sites, the WSCC/SDNPA site assessment has made site specific recommendations for a range of in-depth assessments and studies to inform the preservation / and mitigation of identified and unidentified above and below ground cultural heritage assets.
- 5.126 Protection of the historic environment would benefit the **Cultural** ecosystem services. Therefore, all of the sites except Woodmancote, are also likely to have a negative effect on Cultural ecosystem services.

SA Objective 9 (Soil / land quality)

- 5.127 Most of the sites are likely to have a **minor negative effect** on SA Objective 9, as they are large (i.e. over 20ha) and 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 situations, mineral extraction at the site could result in the loss of high quality agricultural land. At Brick Kiln Farm, a **significant negative effect** was scored. Although small areas in the far north and north western parts of the site were found to be on non-agricultural land, most of the 47.29 ha site was found to be on grade 1 agricultural land, which would result in a significant loss of high quality agricultural land. One site (Rock Common) was assessed as having a **negligible effect** owing to the sites being on non-agricultural land.
- 5.128 Protection of soil quality would benefit the **Regulating** ecosystem services. Therefore, all of the sites except Rock Common and Chantry Lane Extension with potential negative effects identified on SA Objective 9, are also likely to have a negative effect on Regulating ecosystem services.

SA Objective 10 (Air Quality)

- 5.129 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, AQMA's where existing air pollution issues have been identified, there is more potential for negative effects on air quality.
- 5.130 Based on the Highways Agency Design Manual for Road and Bridges (DMRB) Volume 11, Section 3, Part 1²⁶ (which was produced to provide advice regarding the design, assessment and operation of trunk roads (including motorways)), a significant effect on air quality would only occur if the annual average daily traffic (AADT) heavy duty vehicle (HDV) flows along particular routes were likely to increase by 200 AADT or more. However, according to the West Sussex Minerals Local Plan: Transport Assessment (2015) none of the sites are expected to result in increases by 200 AADT or more.
- 5.131 Most of the sites will have **minor negative impacts** on SA Objective 10 because the WSCC/SDNP site assessment identified the likelihood that traffic from the site would pass through a neighbouring AQMA over 1km away. In a few cases, a minor negative effect was given due to the

²⁶ Design Manual for Road and Bridges. Highways Agency. <http://dft.gov.uk/ha/standards/dmr/index.htm>

site being within 1km of an AQMA. This was the case at Chantry Lane Extension, Therefore, development at these sites could have a minor negative effect on the health of local residents, visitors to the County as well as the local amenity.

- 5.132 East of West Heath Common and Land Adjacent to West Hoathly Brickworks) scored a **negligible effect** as they were not within 1km of an AQMA or where unlikely to result in traffic flows that would travel through an AQMA. Furthermore, they were not expected to result in HDV flows of greater than 200 AADT or more.
- 5.133 Protection of air quality would benefit the **Regulating** ecosystem services. Therefore, all of the sites, apart from East of West Heath Common and Land Adjacent to West Hoathly Brickworks, are likely to have a negative effect on Regulating ecosystem services.

SA Objective 11 (Water quantity and quality)

- 5.134 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. Eight of the potential mineral sites are not located within SPZ1 and are not within or adjacent to a water body and an **uncertain** effect has been identified. While they may not have a negative effect, at this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.
- 5.135 While none of the remaining sites are located in SPZ1, the potential for minor and significant negative effects has still been identified. Five of the potential mineral sites are not located within SPZ1, but the WSCC/SDNPA site assessment found that there are either surface water bodies on the boundaries of the site (Chantry Lane Extension, Horncroft, Severals West, East of West Heath Common) and/or the site is located on a major aquifer (East of West Heath Common, Minsted West), and/or the groundwater levels are likely to be high (Severals West), and therefore could have negative impacts in the absence of a high level of mitigation. These sites have been judged in the SA as having potential **minor negative effects** on water quality. For those sites located on a major aquifer of the groundwater levels are likely to be high, the WSCC/SDNPA site assessments also note that the depth of working and de-watering operations will need to be explored and assessed, and that avoiding below groundwater level working is preferable.
- 5.136 Three sites have the potential for **significant negative effects** on water quality (Rock Common, Bunton Manor Farm and Ham Farm). These sites are not located within SPZ1 but the WSCC/SDNPA site assessment notes that there are several surface water streams running along the boundaries of Ham Farm, and there is a water body which passes through the northern area of Rock Common and the northern boundary/central area of Bunton Manor Farm. All three sites were 'screened out' for Appropriate Assessment as part of the updated Habitats Regulations Assessment carried out in 2015. It is therefore concluded that an adverse effect on the integrity of international nature conservation sites will not occur due to changes in water quality. While these sites have the potential to have significant negative effects on the surface water bodies within and adjacent to them, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.
- 5.137 For Rock Common, the WSCC/SDNPA site assessment notes that as this site will potentially be used for deep quarrying and the impact on water resources is more complicated and recommends that a Risk Assessment of the water environment (Qualitative Hydrological & Hydrogeological Risk Assessment) is undertaken. Due to the complexities, the Environment Agency has recommended phase 1 and 2 assessments prior to allocation.
- 5.138 Similarly, the WSCC/SDNPA site assessment also recommends that there should be no below water table quarrying at Bunton Manor Farm. As groundwater is being dewatered at the nearby site at Rock Common, the site assessment states, *'groundwater levels underneath the site are unlikely to be representative of natural conditions. Therefore groundwater monitoring and an assessment will have to be made on the natural groundwater table at this site'*.
- 5.139 There are other regulatory regimes in place, such as the Environment Agency's Environmental Permitting regime, which require the minerals industry to obtain permits setting out thresholds for impacts on water supply and quality from minerals operations. Therefore, it is assumed that any minerals extraction operation that might occur in future on a site allocated in the Joint MLP will be

undertaken in line with the Environmental Permit, which should also help to minimise potential effects on water supply and quality.

- 5.140 Protection of water quality would benefit the **Regulating** ecosystem services. Therefore, the seven sites identified as having minor or significant negative effects on SA Objective 11 are also likely to have a negative effect on Regulating ecosystem services.

SA Objective 12 (Flooding)

- 5.141 All but four of the sites are likely to have **minor negative, uncertain effects** on SA Objective 12 as parts of the site are identified in the SFRA Update and Sequential Test of Mineral Sites (July 2015) as being within an area of flooding from one or more of the flooding sources (e.g. groundwater, sewers and artificial sources, or surface water). However, it is important to note that these sites are identified as having no effect against most of the identified flooding sources. Also, sand and gravel sites (which most of the appraised sites are) are class as water-compatible development in the NPPF Technical Guide²⁷, and therefore can be located in any flood zone. However, these minor negative effects are uncertain as more detailed site-specific Flood Risk Assessments would be required once proposals are known at the planning application stage.
- 5.142 The remaining four sites (Rock Common, Horncroft, Buncton Manor Farm and Land adjacent to West Hoathly Brickworks) are **unlikely to have effects** on SA Objective 12 as they are identified as having no effect on all or most of the identified flooding sources and/or only a small part of the site (<10%) has been identified as an area of flooding from the identified flooding sources.
- 5.143 Reducing vulnerability to flooding would benefit the **Regulating** ecosystem services. Therefore, the majority of sites identified as having minor or significant negative effects on SA Objective 12 are also likely to have a negative effect on Regulating ecosystem services.

SA Objective 13 (Minimise road transport and impacts of lorry traffic)

- 5.144 One site, Several West is likely to have **significant negative effects** on SA Objective 13, as the West Sussex Minerals Local Plan: Transport Assessment (2015) found it to have a 'low' acceptability rating due to having uncertainties with regards to whether a safe and achievable access into the site can be provided and/or the site location and/or traffic routing may be routed through sensitive receptors, without the possibility of mitigation.
- 5.145 Several sites (Rock Common, Ham Farm, Land Adjacent to West Hoathly Brickworks, East of West Heath Common, Minsted West, Buncton Manor Farm and Horncroft) are likely to have **mixed negligible/minor negative effects**, because the Transport Assessment identified that they have a 'high' acceptability rating and can be accessed from the highway network and development traffic routing has minimal impact on sensitive receptors and requires minimal / no mitigation measures to be put in place. The minor negative effect identified, is because these sites do not have opportunities for non-road based transport.
- 5.146 The remaining sites (Brick Kiln Farm, Chantry Lane Extension, Woodmancote, Common Road West, Common Road East, Slades Field, Funtington West and the Processing Area north of Woodmancote) are likely to have a **minor negative effect**. The Transport Assessment found that they have a 'medium' acceptability rating.
- 5.147 Minimising road transport would benefit the **Regulating** ecosystem services. Therefore, as all of the sites could have minor or significant negative effects on SA Objective 13, they are also likely to have a negative effect on Regulating ecosystem services, although the seven sites with mixed effects might also have a negligible impact.

SA Objective 14 (Greenhouse gas emissions)

- 5.148 The majority of sites are likely to have **mixed minor positive/minor negative effects** on this objective, as they are within close proximity to strategic development allocations in Local Plans and could potentially contribute to reducing transport distances of aggregates for construction. However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to

²⁷ DCLG. Technical Guidance to the National Planning Policy Framework, March 2012.

have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.

- 5.149 Four sites (East of West Heath Common, Minsted West, Several West and Horncroft) which are not in close proximity to strategic allocations, are likely to have **minor negative effects** only on greenhouse gas emissions.
- 5.150 Reducing greenhouse gas emissions would benefit the **Regulating** ecosystem services. Therefore, as all of the sites could have minor negative effects on SA Objective 14, they are also likely to have a negative effect on Regulating ecosystem services, although the majority of sites were considered to have mixed effects therefore, they might also have a positive impact on Regulating ecosystem services.

Hambrook Grouping

- 5.151 The Hambrook Grouping is located northwest of Chichester, situated between the settlements of Funtington, Woodmancote and Hambrook. The Grouping includes six separate sites: five sites proposed for extraction (Woodmancote, Common Road West, Common Road East, Slades Field, and Funtington West) and one proposed processing site (Processing Area north of Woodmancote).
- 5.152 If all sites in the Hambrook Grouping are allocated in the Joint MLP, the five extraction sites are likely to be worked sequentially over approximately 15-25 years. However, depending on the potential site operator, the Processing Area north of Woodmancote could also be used and would therefore be active while each extraction area is worked. Therefore, the combined effect of the operational processing area and active extraction in each of the five sites is likely to lead to cumulative effects in the area, particularly on the health and amenity of local communities at Funtington, Woodmancote and Hambrook. These effects would be due to the extraction and processing sites resulting in some level of noise, vibration, dust and light pollution during site preparation, operation and restoration and associated with the transport of minerals from the site.
- 5.153 Evidence from the former Annex 2: Noise of Minerals Policy Statement 2 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. National Planning Practice Guidance for Minerals²⁸ also states that activities such as soil-stripping, the construction and removal of baffle mounds, soil storage mounds and soil heaps, construction of new permanent landforms and aspects of site road construction and maintenance may give rise to particularly noisy short-term activities. However, temporary daytime noise limits would be considered to facilitate essential site preparation and restoration work, and construction of baffle mounds where it is clear that this will bring longer-term environmental benefits to the site or its environs. It is also important to note that cumulative effects on the amenity and health of local communities are 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), 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. Therefore, cumulative effects on the amenity of local communities are minor and uncertain at this stage.
- 5.154 Cumulative effects of the operation of the Hambrook Grouping are also likely in relation to air quality and traffic, including highway safety and capacity, as all sites are expected to have minor negative effects on SA objectives 10 (air quality) and 13 (transport). For example, the WSCC/SDNPA site assessment notes that *'traffic from this site may pass through the AQMA's in Chichester'*, and the West Sussex Minerals Local Plan: Transport Assessment (2015) assessed all sites within the Grouping as having a 'medium' acceptability rating, dependent on *'the outcome of Highways England proposals for the A27 Chichester bypass'*. Furthermore, the Transport Assessment notes that:

²⁸ Accessible at: <http://planningguidance.planningportal.gov.uk/blog/guidance/minerals/assessing-environmental-impacts-from-minerals-extraction/noise-emissions/>

- The impact of development-related traffic (both singular and cumulative) on the proposed junction schemes will therefore need to be assessed for the future year scenario, before any decisions on sites suitability (in terms of traffic impact) can be made.
- The site has the disadvantage of being located c.9km from the LRN, and in order to access the LRN it will be necessary for development-related traffic to travel through residential areas.

- 5.155 The Hambrook Grouping was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulations Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration. The HRA report concluded that overall, development at each of the sites within the Grouping was unlikely to cause harm to international sites or other sites within West Sussex. However, the potential for in-combination effects on internationally designated nature conservation sites in Hampshire and Surrey Counties could occur if a significant increase in movements on the A27 and A3 is likely, and the HRA noted that transport assessments for the Hambrook Grouping should take this into account. The West Sussex Minerals Local Plan: Transport Assessment (2015) has since estimated that there would be 108 two-way daily AADT movements and therefore does not represent a significant increase.
- 5.156 Due to the potential minor negative effects identified for all the sites within the Hambrook Grouping for a number of the SA objectives, if the Hambrook Grouping is allocated in the JMLP, it is likely that there could also be cumulative effects in relation to landscape, biodiversity, the historic environment, loss of best and most versatile agricultural land, and flooding.
- 5.157 However, there could be a cumulative positive effect on recreation in the long term if the Hambrook Grouping is allocated as the WSCC/SDNPA site assessments for these sites notes that *'creation of a new public bridleway connecting bridleway 254 with a point immediately south of Adsdean Park Road would be sought, providing a valuable local off-road connection for non-motorised users (NMUs) as an alternative to Hares Lane, where vehicles can speed and visibility around corners is not conducive for NMUs (and drivers') safety'.*

Table 5.9: Summary of SA scores for the potential mineral site options

SA Objective	Rock Common West	Ham Farm	Land Adjacent to West Hoathly Brickworks	East of West Heath Common	Minsted West	Severals West	Horncroft	Buncton Manor Farm	Brick Kiln Farm	Hambrook Grouping						Chantry Lane Extension
										Woodmancote	Slades Field	Funtington West	Common Road East	Common Road West	Processing Area north of Woodmancote	
1. Health, well-being and amenity	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
2. Recreation	--	-	-	-	-	--	-	-	++/-	--	-?	++/-	+	-	-	-
3. Local economy	+/-?	+	+	+	+	+	+	+/-?	+	+	+	+	+	+	+	+
4. Minerals resources	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
5. Landscape	-	-	--	-	--	--	--	--	0	-	-	--	-	-	-	-
6. Biodiversity	-?	--?	--?	-?	--?	--?	--?	-?	--?	-?	-?	--?	--?	--?	--?	--?
7. Geodiversity	-?	0	-?	0	0	0	0	-?	0	0	0	0	0	0	0	-?
8. Historic environment	-?	-?	-?	-?	-?	-?	-?	-?	-?	0	-?	-?	-?	-?	-?	-?
9. Soil quality	0	-	-	-	-	-	-	-	--	-	-	-	-	-	-	-
10. Air quality	-?	-?	0	0	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?	-?
11. Water resources and quality	--?	--?	?	-?	-?	-?	-?	--?	?	?	?	?	?	?	?	-?
12. Flooding	0?	-?	0?	-?	-?	-?	0?	0?	-?	-?	-?	-?	-?	-?	-?	-?
13. Transport	0/-	0/-	0/-	0/-	0/-	--	0/-	0/-	-	-	-	-	-	-	-	-
14. Greenhouse gas emissions	+/-	+/-	+/-	-	-	-	-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	-

Table 5.10: Summary of possible benefits or impacts on the four main ecosystem services for the potential mineral site options

SA objective	Rock Common West	Ham Farm	Land adjacent to West Hoathly Brickworks	East of West Heath Common	Minsted West	Severals West	Horncroft	BUNCTON MANOR FARM	Brick Kiln Farm	Hambrook Grouping						Chantry Lane Extension
										Woodmancote	Slades Field	Funtington West	Common Road East	Common Road West	Processing Area	
1. Health, well-being and amenity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Recreation	C --	C -	C -	C -	C -	C --	C -	C -	C++/-	C--	C-	C-	C+?	C-	C -	C -
3. Local economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Minerals resources	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -
5. Landscape	C -	C -	C --	C -	C --	C --	C --	C --	C 0	C -	C -	C --	C -	C -	C -	C -
6. Biodiversity	P -?	P --?	P --	P -	P --	P --	P --?	P -?	P --?	P -?	P -?	P --?	P --?	P --?	P --?	P --?
	R -?	R --?	R --	R -	R --	R --	R --?	R -?	R --?	R -?	R -?	R --?	R --?	R --?	R --?	R --?
	C -?	C --?	C --	C -	C --	C --	C --?	C -?	C --?	C -?	C -?	C --?	C --?	C --?	C --?	C --?
7. Geodiversity	C -?	C 0	C -?	C 0	C 0	C 0	C 0	C -?	C 0	C 0	C 0	C 0	C 0	C 0	C 0	C -?
8. Historic environment	C -?	C -?	C -?	C -?	C -?	C -?	C -?	C -?	C -?	C 0	C -?	C -?	C -?	C -?	C -?	C -?
9. Soil quality	R 0	R -	R -	R -	R -	R -	R -	R -	R --	R -	R -	R -	R -	R -	R -	R -
10. Air quality	R -?	R -?	R 0	R 0	R -	R -	R -	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?
11. Water resources and quality	R --?	R --?	R ?	R -?	R -?	R -?	R -?	R --?	R ?	R ?	R ?	R ?	R ?	R ?	R ?	R -?
12. Flooding	R 0?	R -?	R 0?	R -?	R -?	R -?	R 0?	R 0?	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?

SA objective	Rock Common West	Ham Farm	Land adjacent to West Hoathy Brickworks	East of West Heath Common	Minsted West	Severals West	Horncroft	BUNCTON MANOR FARM	Brick Kiln Farm	Hambrook Grouping						Chantry Lane Extension
										Woodmancote	Slades Field	Funtington West	Common Road East	Common Road West	Processing Area	
13. Transport	R 0/-	R 0/-	R 0/-	R 0/-	R 0/-	R --	R 0/-	R 0/-	R	R -	R -	R -	R -	R -	R -	R -
14. Greenhouse gas emissions	R +/- /	R +/-	R +/-	R -	R -	R -	R -	R +/-	R +/-	R +/-	R +/-	R +/-	R +/-	R +/-	R +/-	R -

6 Sustainability Appraisal Findings – Policies and Site Allocations

- 6.1 This chapter describes the findings of the SA of the Vision and Strategic Objectives, Policies and Site Allocations that WSCC and SDNPA have included in the Proposed Submission Draft West Sussex Joint Minerals Local Plan (Regulation 19) (January 2017). The components of the plan are divided into the following headings within this Chapter:
- Vision and Strategic Objectives.
 - Strategic Policies covering Strategic Minerals Supply, Safeguarding Minerals Resources and Safeguarding Minerals Supply Infrastructure and Strategic Minerals Site Allocations.
 - Development Management (DM) Policies.
- 6.2 The SA matrices prepared for the Strategic Policies and Development Management Policies within the Proposed Submission Draft JMLP (January 2017) are presented in **Appendices 8 and 9**, and the summary of findings are presented below under the three headings listed above.

Vision and Strategic Objectives

Joint Minerals Local Plan Vision

- 6.3 The Vision for the Joint Minerals Plan for West Sussex and the South Downs National Park sets out a positive vision for the future to be achieved by the end of the plan period in 2033 which encourages sustainable economic growth as required by the NPPF, and is likely to have a positive effect on the majority of the SA objectives as shown in **Table 6.1**.
- 6.4 Positive effects have been identified for **social** SA objectives, as the Vision aims for West Sussex and the South Downs National Park to be a special place to live and visit while maintaining thriving communities locally which the production and transportation of minerals does not detract from. The Vision also supports the provision of minerals to enable the delivery of housing and other development to support local social and economic growth. A minor positive effect is therefore expected for SA objective 1 (health, well-being and amenity of residents). A significant positive effect is expected in relation to SA objective 2 (recreation) as the Vision also specifically identifies that the restoration of mineral sites is expected to increase opportunities for recreation and tourism. Protection of recreational assets would benefit the **Cultural** ecosystem services.
- 6.5 Contributing to mineral supply and the needs of other areas as well as meeting the County and National Park's own needs for minerals by ensuring aggregate provision supports social and economic progress locally, should result in significant positive effects on **economic** SA objectives 3 (local economy) and 4 (Conservation and supply of mineral resources). The positive effects expected on these SA objectives are also supported by the Vision stating that minerals are to be produced in a manner which contributes to a low carbon, circular economy and that mineral resources are to be safeguarded from sterilisation by other forms of development. Furthermore, the Vision also seeks to source minerals from other means other than primary won land aggregates. Conservation of minerals would benefit the **Supporting** ecosystem services, as minerals contribute to soil formation and nutrient cycling.
- 6.6 Positive effects are likely for seven out of the ten **environmental** SA objectives with two of these expected to be significant: SA objectives 5 (landscape) and 6 (biodiversity). The Vision supports mineral production which is carried out in a way which conserves and enhances the outdoor environment of West Sussex, as well as the special qualities of the South Downs National Park. The restoration of mineral sites is also to be carried out to a high standard, as the Vision requires delivery of larger areas of well managed and connected areas of habitat including lowland heath, woodlands and wetlands to support enhanced populations of priority species. The Vision therefore

supports the protection, conservation and enhancement of biodiversity, and landscape in West Sussex, and in this way would also benefit the **Provisioning, Regulating** and **Cultural** ecosystem services. Ensuring that valuable mineral resources in West Sussex and the National Park are safeguarded from sterilisation and that mineral sites will be restored to the highest standards should provide protection to and help preserve any geological features. However, as this is not specified in the wording of the vision, any positive effects on SA objective 7 (geodiversity) are currently minor and uncertain. The Vision contributes to the conservation and enhancement of the historic environment by supporting the use of locally produced bricks and locally sourced stone, to enhance the local distinctiveness and the archaeological heritage of West Sussex and the National Park. Additionally, the Vision seeks to ensure that mineral extraction protects and enhances the historic environment. Therefore, a significant positive effect is expected on SA objective 8 (historic environment). Furthermore, a minor positive effect is expected on SA objectives 10 (air quality), 13 (transport), and 14 (greenhouse gases) given that the Vision supports a reduction in the transport of minerals by road, aims to ensure the supply of minerals via ports and railheads, and aims to ensure that minerals have been produced in a manner that contributes to a low carbon, circular economy. These positive effects would also benefit the **Cultural** and **Regulating** ecosystem services.

- 6.7 A negligible effect is expected in relation to the Vision for SA objectives 9 (soil), 11 (water resources and water quality) and 12 (flooding), as the Vision does not address these issues directly. The Vision also does not address the broader issues of environmental assets or natural resources which can have an indirect effect on these objectives. However, Strategic Objective 9 (flooding and the water environment) addresses the issues covered by SA objectives 11 (water resources and water quality) and 12 (flooding) and it was therefore **recommended in the previous SA Report (April 2016) that the Vision should make an overarching statement in relation to flooding and the water environment as a hook for the Strategic Objectives**. While effects are likely in relation to some of the Strategic Objectives (e.g. Strategic Objective 8, Natural and Historic Environment) for SA Objective 9 (soil), soil is not directly referred to in the Strategic Objectives. Therefore, while all aspects of the SA objectives do not need to be covered in the Vision, **it was recommended in the previous SA Report (April 2016) that that the Vision should make an overarching statement in relation to soil as a hook for the Strategic Objectives**.
- 6.8 While these two recommendations were not directly addressed, the Vision does state: *"Will have ensured minerals have been produced in a manner that protects and enhances the historic and natural environment"*.

Joint Minerals Local Plan Strategic Objectives

- 6.9 The Strategic Objectives are generally compatible with and supportive towards achievement of the SA objectives, although there are a number of minor negative effects identified as well for six of the Strategic Objectives, particularly for the environmental SA objectives, as shown in **Table 6.1**. There are also a number of negligible effects from the Strategic Objectives, as they tend to be narrowly focused on specific issues.
- 6.10 Strategic Objectives 2 (secondary and recycled aggregates), 6 (health and amenity), 9 (flooding and the water environment), 10 (transport) and 11 (after use) are expected to protect and enhance the health, wellbeing and amenity of local communities and visitors from the potentially adverse effects of mineral development; thereby having positive effects on **social** SA objective 1 (health, well-being and amenity of residents). The positive effects on this SA objective are expected to be minor for all identified Strategic Objectives except Strategic Objective 6 (health and amenity), which is expected to be significant, given that this Strategic Objective directly supports the enhancement of the health and local amenity of residents, businesses and visitors within the County. The other Strategic Objectives (1 (efficient production and use of minerals), 3 (provision of soft sand) 4 (mineral development sites and infrastructure), 5 (safeguarding minerals resources), 7 (landscape and townscape), 8 (natural and historic environment), and 12 (climate change)) are unlikely to affect SA objective 1. While protection of health and well-being would be supported by all four of the categories of ecosystem services, the positive effects identified for SA objective 1 are unlikely to have a particular impact or benefit on any of the ecosystem services.

- 6.11 Strategic Objectives 6 (health and amenity), 7 (landscape and townscape), and 11 (after use) are expected to have minor positive effects on SA objective 2 (recreation), and therefore also on the **Cultural** ecosystem services. Strategic Objectives 6 (health and amenity) and 7 (landscape and townscape) would have an indirect effect as they seek to protect and enhance the health and amenity of residents and visitors which recreation plays a vital role in, and conserve and enhance the landscape of West Sussex which provides many important opportunities and resources for recreation. Strategic Objective 11 (after use) has the potential to have minor positive effects on SA objective 2 (recreation), as it supports restoration to appropriate after uses, which could include recreation. The remaining 9 Strategic Objectives are not expected to affect SA objective 2 (recreation).
- 6.12 Strategic Objectives 1 (efficient production and use of minerals), 3 (provision of soft sand), 4 (mineral development sites and infrastructure), 5 (safeguarding mineral resources), 6 (health and amenity) and 11 (after use) are expected to have positive effects on **economic** SA objective 3 (local economy). This is because these Strategic Objectives support the sufficient supply of minerals to support local economic needs, seek to protect and maintain existing sites and infrastructure required to meet this mineral need, seek to protect local amenity for business uses, support the safeguarding of economically viable mineral resources, and may potentially provide after uses which can support the local economy (particularly tourist uses) through appropriate restoration. The identified positive effect is significant for Strategic Objectives 1 (efficient production and use of minerals) and 3 (provision of soft sand) due to the recognised importance that the supply of minerals plays in supporting the local economy. While protection of the local economy would be supported in particular by **Provisioning** ecosystem services, the positive effects identified for SA objective 3 is unlikely to have a particular impact or benefit on the ecosystem service.
- 6.13 Strategic Objectives 2 (secondary and recycled aggregates), 4 (mineral development sites and infrastructure) and 5 (safeguarding mineral resources) are expected to have significant positive effects on **economic** SA objective 4 (conservation and supply of mineral resources) as they support the conservation and supply of mineral resources through the supply and use of recycled and secondary aggregates, the aim to protect and maintain mineral development sites and infrastructure, and safeguarding potential economically viable mineral resources from sterilisation. The same Strategic Objectives would have benefits for the **Supporting** ecosystem services, as minerals contribute to soil formation and nutrient cycling. Strategic Objectives 1 (efficient production and use of minerals) and 2 (provision of soft sand) could have mixed, minor positive and minor negative effects on SA objective 4 (conservation and supply of mineral 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.
- 6.14 Strategic Objectives 6 (safeguarding mineral resources) and 7 (health and amenity) are unlikely to affect the majority of the **environmental** SA objectives (5-14). However, positive effects are identified for all environmental SA objectives from at least one of the Strategic Objectives, because many of the Strategic Objectives are seeking to achieve similar environmental outcomes as the SA objectives. For example, Strategic Objectives 8 (landscape and townscape), 9 (natural and historic environment) and 13 (after use) are expected to have positive effects on many of the environmental SA objectives (including significant positive effects on SA objectives 5 (landscape), 6 (biodiversity), 7 (geodiversity), and 8 (historic environment)), as they seek to conserve, protect and enhance landscape, the natural and historic environment, and ensure high quality mitigation and restoration to appropriate after uses. Significant positive effects are also expected for other SA objectives, including SA objective 11 (water resources and water quality) and 12 (flooding) as Strategic Objective 10 (flooding and the water environment) seeks to minimise risks from flooding, safeguard groundwater aquifers and ensure the water environment is conserved and enhanced. Similarly, Strategic Objectives 11 (transport) and 14 (climate change) are expected to have significant positive effects on SA objectives 13 (transport) and 14 (greenhouse gases) respectively, as they address key elements of the SA objectives. These positive effects would also benefit the **Cultural** and **Regulating** ecosystem services in particular, with the positive effects on SA objective 6 (biodiversity) also benefitting the **Provisioning** ecosystem services.
- 6.15 There are also mixed, minor positive/minor negative effects expected for many of the **environmental** SA objectives, which in turn could have some negative impacts on the **Cultural**,

Provisioning and **Regulating** ecosystem services. For example, mixed effects are expected for all **environmental** SA objectives in relation to Strategic Objectives 1 (efficient production and use of minerals), 3 (provision of soft sand), 5 (mineral development sites and infrastructure) and 12 (protection from oil and gas impacts), as minor negative effects may be caused by workings associated with the extraction of mineral resources (e.g. land take, landscape impact, increased HGV traffic). However, sites may also have the potential to have positive effects on environmental SA objectives due to the mitigation that can be put in place and the benefits and enhancements sites 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). Similar mixed effects were identified for a number of SA objectives in relation to Strategic Objective 2 (secondary and recycled aggregates) given that it would support a reduction in the need for the use and extraction of primary resources, although some minor negative effects would still be expected due to the effects caused by the associated workings (e.g. transport and air quality). Mixed effects were also identified for SA objectives in relation to Strategic Objective 13 (after use) as it will support landscape restoration and reductions in traffic levels and greenhouse gases, for example, due to mineral site activities ceasing and the associated restoration of sites. However, minor negative effects may also occur due to the after use proposed at sites, which could result in additional traffic generation, landscape impacts and/or potential flooding issues.

Table 6.1: Summary of SA scores for the Vision and Strategic Objectives

	Vision	1. Efficient production & use of minerals	2. Secondary and recycled aggregates	3. Provision of Soft sand	4. Provision of silica sand	5. Mineral development sites and infrastructure	6. Safeguarding mineral resources	7. Health and amenity	8. Landscape and townscape	9. Natural and historic environment	10. Flooding and the water environment	11. Transport	12. Protection from oil and gas impacts	13. After use	14. Climate change
Social															
1. Health, well-being and amenity of residents	+	0	+	0	0	0	0	++	0	0	+	+	++	+	0
2. Recreation	++	0	0	0	0	0	0	+	+	0	0	0	+	+	0
Economic															
3. Local economy	++	++	0	++	++	+	+	+	0	0	0	0	+	+	0
4. Mineral resources	++	+/-	++	+/-	+/-	++	++	0	0	0	0	0	+	0	0
Environmental															
5. Landscape	++	+/-	+/-	+/-	+/-	0	0	0	++	++	0	0	+/-	+/-	0
6. Biodiversity	++	+/-	+/-	+/-	+/-	0	0	0	+	++	+	0	+/-	+	0
7. Geodiversity	+	+/-	0	+/-	+/-	0	0	0	+	++	0	0	+/-	+	0
8. Historic environment	++	+/-	0	+/-	+/-	0	0	0	++	++	0	0	+/-	+	0
9. Soil	0	+/-	+	+/-	+/-	0	+	0	0	+	0	0	+/-	+	0
10. Air quality	+	+/-	+/-	+/-	+/-	+/-	0	0	0	+	0	+	+/-	+/-	+
11. Water resources and water quality	0	+/-	0	+/-	+/-	0	0	0	0	+	++	0	+/-	+/-	0
12. Flooding	0	+/-	0	+/-	+/-	0	0	0	0	+/-	++	0	+/-	+/-	0
13. Transport	+	+/-	+/-	+/-	+/-	+/-	0	0	0	+	0	++	+/-	+/-	0
14. Greenhouse gases	+	+/-	+/-	+/-	+/-	+/-	0	0	0	+	0	+	+/-	+/-	++

Strategic Policies

- 6.16 This section summarises the SA findings for the strategic mineral policies contained in the Proposed Submission Draft JMLP. **Tables 6.2** and **6.3** summarise the scores from the full SA matrices for each strategic policy presented in **Appendix 8**.

Policy M1 – Sharp Sand & Gravel

- 6.17 Policy M1 is predominantly expected to have mixed minor positive and minor negative effects on the SA objectives (e.g. SA objectives 1 (health, wellbeing and amenity of residents), and 4 – 8), as the policy option supports the maintenance of supply from existing permitted reserves, such as at Kingsham Quarry. Continuing extraction at this site may result in the continuation of possible negative effects on the health, wellbeing and amenity of residents or the landscape. However, maintaining supplies from existing permitted reserves, may avoid impacts from new sites on previously unaffected residents, and may still result in benefits to landscape and biodiversity through the site's eventual restoration. Uncertain minor negative effects are expected for SA objectives 10 (air quality) and 13 (transport) due to the potential for increased traffic movements and associated emissions arising from mineral transport; while the policy encourages the use of rail and water mineral transportation where appropriate for new proposals this will depend on specific proposals that come forward, and as existing primary extraction site (Kingsham Quarry) will be the main source of sharp sand and gravel, extracted material will continue to be transported by road. Conversely, uncertain minor positive effects might occur on SA objectives 12 (flooding) and 14 (greenhouse gas emissions) as sand and gravel workings are classed as water-compatible development and are potentially suitable development within all flood zones, and provision of sufficient sand and gravel sites within the plan area should reduce the need for additional importation of sharp sand and gravel into West Sussex, thereby reducing greenhouse gas emissions.
- 6.18 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives described above for Policy M1 above.

Policy M2 – Soft Sand

- 6.19 Policy M2 is expected to have significant negative effects for SA objectives 10 (air quality), 13 (transport) and 14 (greenhouse gases), due to the increased dependence on imports to meet requirements which cannot be met from indigenous supplies, which is likely to result in increases in lorry traffic transporting soft sand into West Sussex by road. However, this is uncertain as soft sand supplies could potentially be replaced by marine won sand landed in West Sussex.
- 6.20 The policy supports the maintenance of supply from permitted reserves and potential new sites that may come forward, and seeks to prevent the use of additional sites or extensions to existing sites within the South Downs National Park unless there are exceptional circumstances and proposals are in the public interest. Therefore, this policy is also expected to have mixed minor positive and minor negative effects on SA objectives 2 (recreation), and 4 – 8. For example, for SA objective 5 (landscape) there could be positive effects associated with not permitting sites in the SDNP and also longer term restoration of existing sites, but negative effects through the continued operation of existing sites in the SDNP and potential sites coming forward outside of the SDNP. However, development management policies in the JMLP (covering public amenity and health, character, landscape, biodiversity and geodiversity) would provide mitigation which should help to avoid potential negative effects associated with any new proposals coming forward. Minor negative but uncertain effects are identified for SA objectives 1 (health and amenity) and 9 (soil quality) due to impacts such as dust, noise, vibration and traffic associated with new soft sand workings that may come forward, and the potential for loss of best and most versatile land. Conversely, uncertain minor positive effects might occur on SA objectives 3 (local economy) and 12 (flooding) because providing support for the maintenance of supplies from existing permitted reserves and permitting new sites that could come forward is likely to help sustain and enhance

the vitality and viability of the local economy, and as sand and gravel workings are classed as water-compatible development and are therefore suitable in all flood zones.

- 6.21 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for Policy M2. For example, this policy is considered likely to have significant negative uncertain effects in relation to **Regulating** ecosystem services due to the potential inability to protect air quality or minimise road traffic.

Policy M3 – Silica Sand

- 6.22 Policy M3 is expected to mainly have minor negative uncertain effects and mixed positive and negative uncertain effects. Minor negative uncertain effects are expected on SA objectives 1 (health, wellbeing and amenity of residents), 6 (biodiversity), 9 (soil), 10 (air quality) and 13 (transport). Unallocated silica sand sites could have minor negative effects as a result of the associated mineral activities (e.g. traffic, noise, dust, land take etc.). However, proposed development management policies in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.
- 6.23 Mixed positive and negative uncertain effects are also expected for SA objectives 2 (recreation), 4 (conservation and supply of mineral resources), 5 (landscape), 7 (geodiversity) and 8 (historic environment). For example, the policy is expected to have mixed minor positive and significant negative uncertain effects on SA objective 5 (landscape) as unallocated silica sand sites are likely to be located within the SDNP due to the location of the resource, thereby negatively impacting on this nationally important landscape designation. Sites may also have minor positive effects in the long term as the restoration of sites could lead to positive effects for the landscape. However, mitigation for the potential significant negative effects on landscape would be considered via proposed development management policies in the JMLP (e.g. landscape). Furthermore, the policy itself would require the stringent exceptional circumstances and public interest tests (set out in paragraph 116 of the NPPF) to be applied to any applications that come forward for development due to the location of the silica sand resource in the SDNP.
- 6.24 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for Policy M3. For example, this policy is considered likely to have significant negative uncertain effects (as part of a mixed effect on SA objective 5) in relation to **Cultural** ecosystem services due to the potentially inability to protect landscape character.

Policy M4 – Chalk

- 6.25 Policy M4 allows proposals for new chalk sites and extensions to be assessed against a criteria-based policy. Minor positive effects are expected on SA objective 3 (local economy), as it provides support to new sites, thereby making a positive contribution to the local economy via new jobs and/or continuing to support existing jobs. Like other policies (e.g. Policy M5) the policy is expected to largely have minor negative uncertain effects and mixed positive and negative effects. For example, mixed significant positive and minor negative effects are expected on SA objective 8 (historic environment) as sites permitted by this policy could help conserve the historic environment in West Sussex and maintain its local distinctiveness, as the chalk worked in the sites could be used as restorative and conservation material (for example in the crypt of Chichester Cathedral), thereby contributing to conserving and enhancing West Sussex's historic environment. Sites permitted by the policy may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the proposed policy may also have minor negative effects on SA objective 8, 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.
- 6.26 Despite the potential negative effects on SA objectives identified for Policy M4, proposed development management policies in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.

- 6.27 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for Policy M4. For example, the policy considered is likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 8) in relation to **Cultural** ecosystem services due to the potential ability to protect and enhance the historic environment.

Policy M5 – Clay

- 6.28 Policy M5 is expected to have mostly mixed positive and negative uncertain effects, and minor negative uncertain effects. For example, the policy is likely to have mixed positive and negative effects on SA objectives 2 (recreation), 4 (conservation and supply of mineral resources), 5 (landscape), 7 (geodiversity) and 8 (historic environment). The mixed positive effects are expected to be significant for SA objective 8 (historic environment), as sites may work clay (e.g. Gault Formation) which is used in products such as hand-made bricks which have aesthetic and restoration uses, thereby contributing to conserving and enhancing West Sussex's historic environment. Minor negative uncertain effects are expected for SA objectives 1 (health, wellbeing and amenity of residents), 6 (biodiversity), 9 (soil), 10 (air quality) and 13 (transport) due to the effects associated with mineral operations (e.g. dust, noise, traffic levels, biodiversity impacts and land take). However, proposed development management policies in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.
- 6.29 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for Policy M2. For example, the policy is considered likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 8) in relation to **Cultural** ecosystem services due to the potential ability to protect and enhance the historic environment.

Policy M6 – Building Stone

- 6.30 Policy M6 is expected to have a number of minor negative uncertain effects on the SA objectives, including SA objectives 1 (health, wellbeing and amenity of residents), 6 (biodiversity) and 9 (soil) due to the effects associated with mineral operations (e.g. dust, noise, traffic levels, and land take). However, proposed development management policies in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects.
- 6.31 The policy is also expected to have a number of mixed effects, predominantly minor positive and minor negative uncertain (e.g. SA objectives 2 (recreation), 5 (landscape), 7 (geodiversity), 10 (air quality), and 13 (transport)). However, the policy is likely to have mixed significant positive/minor negative effects on SA objective 8 (historic environment). This is because sites permitted by the policy may involve activities that affect the historic environment, but sites could also help conserve the historic environment in West Sussex and maintain its local distinctiveness, in some cases conserving buildings using similar, local stone, thereby conserving and enhancing West Sussex's historic environment.
- 6.32 In terms of ecosystem services, the potential positive or negative impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as outlined above for Policy M6. For example, this policy is considered likely to have significant positive uncertain effects (as part of a mixed effect on SA objective 8) in relation to **Cultural** ecosystem services due to the potentially ability to protect the historic environment.

Policy M7a – Hydrocarbon²⁹ development not involving hydraulic fracturing³⁰ and M7b – Hydrocarbon development involving hydraulic fracturing

- 6.33 Although Policy M7a does not include hydraulic fracturing and Policy M7b does include hydraulic fracturing, the effects on the SA objectives are likely to be similar due to the similar level of protection within the policies as explained below.
- 6.34 Policies M7a and M7b are expected to have mostly minor negative uncertain effects on the SA objectives (e.g. SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 6 (biodiversity), 7 (geodiversity), 8 (historic environment), 9 (soil), 10 (air quality), 11 (water resources and quality), 13 (transport) and 14 (greenhouse gases), as a result of the activities associated with proposals for exploration and appraisal for oil and gas (e.g. traffic, noise, dust, land take etc.). For example, levels of lorry traffic associated with developments may be substantial due to the transport of wastewater that would be taken off site and possible transportation of extracted oil and gas. Furthermore, there is limited opportunity for conventional and unconventional oil and gas developments to have positive effects on the SA objectives (e.g. SA objectives 2, 7 and 8), due to the small scale of the sites and the nature of the developments lacking opportunity to contribute to the conservation of geological features and enhancement of recreation opportunities for example. However, proposed development management policies in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, transport, and air, soil and water quality) would provide mitigation which should help to avoid potential negative effects. In addition, the policies themselves include some safeguarding against potential impacts, for example, Policy M7b has a presumption against development where hydraulic fracturing is going to take place in Groundwater Source Protection Zones 1, 2 and 3 unless it can be proved that there will be no unacceptable impacts on groundwater.
- 6.35 Mixed positive and negative uncertain effects are also likely on SA objectives 4 (minerals resources) and 5 (landscape). For example, the policy could result in developments that could have landscape impacts. However, it is likely that sites will be relatively contained and small scale, and where they are potentially proposed in designated areas (e.g. SDNP and AONBs), and do not include hydraulic fracturing, the exceptional circumstances and public interest tests would have to be met. For proposals involving hydraulic fracturing, any surface development would not be allowed in SDNP or the AONBs under Policy M7b. The policy could also result in minor positive effects in the long term as the restoration of potential developments could lead to positive effects for the landscape via restoration.
- 6.36 In terms of ecosystem services, the potential impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for Policies M7a and M7b. For example, the policy is considered likely to have minor positive uncertain effects (as part of a mixed effect on SA objective 5) in relation to **Cultural** ecosystem services due to the potentially ability to protect landscape character.

Policy M8 – Mineral processing and ancillary activities at mineral sites

- 6.37 There are three uncertain minor negative effects identified on SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation) and 5 (landscape) because this policy allows for additional secondary mineral processing and/or ancillary activities within mineral extraction sites, which could affect local amenity and recreation areas due to noise, dust and visual impacts. However, these effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage. Dust, noise and visual impacts could also result potential minor negative effects on SA objectives 6 (biodiversity) and 8 (historic environment) while road transportation to and from the sites would also have minor negative effects on SA objectives 10 (air quality), 13 (transport) and 14 (greenhouse gases).

²⁹ This includes conventional and unconventional hydrocarbons.

³⁰ "hydraulic fracturing" in the context of this policy, means hydraulic fracturing of shale or strata encased in shale which—

(a) is carried out in connection with the use of the relevant well to search or bore for or get oil and gas, and

(b) involves, or is expected to involve, the injection of—

(i) more than 1,000 cubic metres of fluid at each stage, or expected stage, of the hydraulic fracturing, or

(ii) more than 10,000 cubic metres of fluid in total.

- 6.38 The policy is likely to have minor positive effects on SA objective 3 (local economy) as processing and ancillary activities support a wide range of end uses and industries that contribute to the supply of material and therefore support sustainable economic growth. In addition, restoration schemes and after uses may benefit the local economy in the long term.
- 6.39 A mixed minor positive and minor negative effect is identified for SA objective 4 (conservation and supply of mineral resources). Secondary mineral processing and/or ancillary activities will not be a form of inappropriate development as they will contribute to the supply of minerals and as such a minor positive effect is identified. However, the policy indirectly supports the extraction and processing of primary minerals to supply ancillary activities and so a minor negative effect is also identified.
- 6.40 The uncertainty relating to water resources (SA objective 11) is due to not knowing how plant, processing and secondary activities are going to effect the water environment in West Sussex which will not be assessed until planning application stage.
- 6.41 In terms of ecosystem services, the potential impact on each of the relevant main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above. For example, this policy could have a minor negative effect on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling, and extracting these minerals would therefore have negative impacts.

Policy M9 – Safeguarding Minerals

- 6.42 Mixed minor positive/minor negative effects are expected on half of the SA objectives from the policy intention for mineral safeguarding areas (MSAs), including SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 3 (local economy), 5 (landscape), 8 (historic environment), 13 (transport) and 14 (greenhouse gases). This is generally because MSAs may potentially restrict non-mineral developments that could themselves have negative effects on sensitive receptors such as communities, biodiversity, and 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. 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 on the specific nature and design of proposals that come forward within MSAs, which will not be known until the planning application stage.
- 6.43 Significant positive effects are expected for SA objectives 4 (conservation and supply of mineral resources) and 7 (geodiversity). This is due to the principle of safeguarding, which ensures that mineral resources will be protected from unnecessary sterilisation by other development, by ensuring that minerals resources will be adequately and effectively considered in all planning decisions. Due to these considerations, within 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.
- 6.44 In terms of ecosystem services, the potential impact on each of the relevant main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for the policy intention. For example, the policy intention is considered likely to have mixed effects on SA objective 7 in relation to **Cultural** ecosystem services due to the potential ability to protect geodiversity.

Policy M10 – Safeguarding Minerals Infrastructure

- 6.45 Mixed minor positive/minor negative effects are expected on half of the SA objectives from the policy for safeguarding mineral infrastructure, including SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 3 (local economy), 5 (landscape), 8 (historic environment), 10 (air quality), 13 (transport) and 14 (greenhouse gases). This is generally because through safeguarding minerals infrastructure, the policy may potentially restrict non-mineral developments that could themselves have negative effects on sensitive receptors such as communities, biodiversity, and heritage assets etc. hence a minor positive effect. However,

safeguarding mineral infrastructure may also lead to mineral extraction activities that could also have negative effects on sensitive receptors, hence the mixed effects identified. It must be emphasised, however, that the principle of safeguarding does not mean that non-mineral development will be prevented in these areas close to minerals infrastructure. Therefore most effects are uncertain, and will depend on the specific nature and design of proposals that come forward, which will not be known until the planning application stage.

- 6.46 One significant positive effect is expected for SA objective 4 (mineral resources) which is because safeguarding minerals infrastructure will not be classed as inappropriate development, as it contributes to the supply of mineral resources and products for the needs of society, not limiting the ability to extract or supply resources.
- 6.47 In terms of ecosystem services, the potential impact on each of the relevant main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives, as described above for the policy intention. For example, the policy is considered likely to have mixed minor positive and minor negative uncertain effects on **Regulating** ecosystem services due to the policy's potential to safeguard railheads and wharves thus reducing the need for minerals to be transported by road which otherwise would increase air pollution. However, safeguarding minerals infrastructure encourages mineral workings which by their nature can exacerbate air pollution.

Policy M11 – Strategic Minerals Site Allocations

- 6.48 Policy M11 is expected to have potential significant negative effects for SA objectives 5 (landscape) and 6 (biodiversity) due to the location of the two allocated sites. Ham Farm is within 250m of the South Downs National Park, while the allocation at West Hoathly is within the High Weald AONB, and both allocations include or are in close proximity to a local biodiversity site or habitat.
- 6.49 Uncertain minor negative effects were identified for SA objective 11 (water). This is because the revised boundary of the site allocation at Ham Farm has a surface water body running along the north western boundary of the site and a small water body in the northern corner of the site. Uncertain minor negative effects were also identified for SA objective 12 (flooding) as a large part of the Ham Farm site (50%) was identified as having a high risk (red) of flooding in relation to ground water. The West Hoathly site allocation is unlikely to affect SA objectives 11 and 12.
- 6.50 Policy M11 is also expected to have a number of minor negative effects on other SA objectives, including SA objectives 1 (health, wellbeing and amenity of residents), 2 (recreation), 8 (historic environment) and 9 (soil) due to the effects associated with the mineral operations that could take place at the two allocated sites (Ham Farm and West Hoathly Brickworks) (e.g. dust, noise, traffic levels, and land take). However, suitable mitigation has been incorporated into the supporting text to Policy M11 through the development principles set out for each allocated site, which seek to ensure proposals for mineral extraction include appropriate mitigation measures. In addition, the proposed development management policies in the JMLP (e.g. public amenity and health, biodiversity and geodiversity, and air, soil and water quality) would also help to provide mitigation which should help to avoid potential negative effects.
- 6.51 The policy is also expected to have a mixed effect on SA objective 7 (geodiversity); negligible effect at Ham Farm and minor negative effect at West Hoathly Brickworks as it is approximately 310m east of the West Hoathly Brickworks SSSI and 140m from the Local Geological Site at West Hoathly Brickworks, Sharpthorne. A mixed negligible and minor negative effect on SA objective 10 (air quality) is also likely, this time negligible for West Hoathly Brickworks, but minor negative for Ham Farm as it may result in traffic passing through an AQMA at the A283 High Street/Manley's Hill, Storrington. The mixed negligible and minor negative effect on SA objective 13 (transport) relates to the 'High' acceptability rating that both site allocations were found to have in The West Sussex Minerals Local Plan: Transport Assessment (2015) and the Ham Farm Addendum (2016), but as both sites are unlikely to have opportunities for non-road based transport, Policy M11 could also have a minor negative effect on this objective.
- 6.52 A mixed minor positive and negative effect was identified for SA objective 14 (greenhouse gas emissions) because the Ham Farm allocation is likely to be within 4km of an allocated site within a

local or neighbourhood plan within Horsham District. Therefore, development at this site could contribute to reducing transport distances of aggregates for construction. In addition, the allocation of a clay extraction site at West Hoathly would enable the brickworks to continue to be supplied from an adjacent site, which would reduce clay transport distances. However, both mineral site allocations could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery.

- 6.53 Finally, Policy M11 could have potential minor positive effects on SA objectives 3 (local economy) and 4 (minerals resources). If minerals extraction takes place at the two allocated sites, this is likely to result in a small amount of job creation for local people in both rural and urban areas increasing employment levels during site preparation, operation and restoration, plus the supply of clay from West Hoathly will allow the brickworks to keep operating and approximately 40 existing jobs to be secured. The allocation of these two sites would also provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.
- 6.54 In terms of ecosystem services, the potential positive or negative impact on each of the main ecosystem services corresponds to the potential for positive or negative effects identified on the SA objectives. For example, this policy is considered likely to have significant negative effects in relation to **Cultural** ecosystem services due to the potential significant negative effect identified on the landscape (SA objective 5).

Table 6.2: Summary of SA scores for the Strategic Policies

Policy	Policy M1 – Sharp Sand and Gravel	Policy M2 – Soft Sand	Policy M3 – Silica Sand	Policy M4 – Chalk	Policy M5 – Clay	Policy M6 – Building Stone	Policy M7a – hydrocarbon not involving hydraulic fracturing	Policy M7b – hydrocarbon involving hydraulic fracturing	Policy M8 – Mineral processing and ancillary activities at mineral sites	Policy M9 – Safeguarding Minerals	Policy M10 – Safeguarding Minerals Infrastructure	Policy M11 – Strategic Minerals Site Allocations
SA Objective												
1. Health, well-being and amenity	+/-?	-?	-?	-?	-?	-?	-?	-?	-?	+/-?	+/-?	-
2. Recreation	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	-?	-?	-?	+/-?	+/-?	-
3. Local economy	+	+	+	+	+	+	+	+	+	++/-	++/-	+
4. Minerals resources	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	++	++	+
5. Landscape	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	-?	+/-?	+/-?	--
6. Biodiversity	+/-?	+/-?	-?	-?	-?	-?	-?	-?	-?	+	+	--?
7. Geodiversity	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?	-?	-?	0	++?	0	0/-
8. Historic environment	+/-?	+/-?	+/-?	++/-	++/-?	++/-?	-?	-?	-?	+/-?	+/-?	--?
9. Soil quality	-?	-?	-?	-?	-?	-?	-?	-?	0	0	0	-
10. Air quality	-?	--?	-?	-?	-?	+/-?	-?	-?	-?	0	+/-?	0/-
11. Water resources and quality	-	?	?	?	?	?	-?	-?	?	0	0	0/-?
12. Flooding	+	+	+	0?	0?	0?	0?	0?	0	0	0	0/-?
13. Transport	-?	--?	-?	-?	-?	+/-?	-?	-?	-?	+/-?	+/-?	0/-?
14. Greenhouse gas emissions	+	+/-?	+	+	+/-?	+	-?	-?	-?	0	+/-?	+/-

Table 6.3: Summary of possible benefits or impacts on the four main ecosystem services for the Strategic Policies

SA Objective	Policy M1 – Sharp Sand and Gravel	Policy M2 – Soft Sand	Policy M3 – Silica Sand	Policy M5 – Clay	Policy M4 – Chalk	Policy M6 – Stone	Policy M7a – hydrocarbon not involving hydraulic fracturing	Policy M7b – hydrocarbon involving hydraulic fracturing	Policy M8 – Mineral processing and ancillary activities at mineral sites	Policy M9 – Safeguarding Minerals	Policy M10 – Safeguarding Minerals Infrastructure	Policy M11 – Strategic Minerals Site Allocations
1. Health, well-being and amenity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Recreation	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C -?	C -?	C -?	C +/-?	C +/-?	C -
3. Local economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Minerals resources	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -	S -
5. Landscape	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C -?	C +/-?	C +/-?	C --
6. Biodiversity	P +/-? R +/-? C +/-?	P +/-? R +/-? C +/-?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P -? R -? C -?	P +? R +? C +?	P +? R +? C +?	P --? R --? C --?
7. Geodiversity	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C +/-?	C -?	C -?	C 0	C ++?	C 0	C 0/-
8. Historic environment	C +/-?	C +/-?	C +/-?	C ++/-?	C ++/-?	C ++/-?	C -?	C -?	C -?	C +/-?	C +/-?	C -
9. Soil quality	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R -?	R 0	R 0	R 0	R -
10. Air quality	R -?	R --?	R -?	R -?	R -?	R +/-?	R -?	R -?	R -?	R 0	R +/-?	R 0/-
11. Water resources and quality	-	R ?	R ?	R ?	R ?	R ?	R -?	R -?	R ?	R 0	R 0	R 0/-?

SA Objective	Policy	Policy M1 – Sharp Sand and Gravel	Policy M2 – Soft Sand	Policy M3 – Silica Sand	Policy M5 – Clay	Policy M4 – Chalk	Policy M6 – Stone	Policy M7a – hydrocarbon not involving hydraulic fracturing	Policy M7b – hydrocarbon involving hydraulic fracturing	Policy M8 – Mineral processing and ancillary activities at mineral sites	Policy M9 – Safeguarding Minerals	Policy M10 – Safeguarding Minerals Infrastructure	Policy M11 – Strategic Minerals Site Allocations
12. Flooding		R +	R +?	R +?	R 0?	R 0?	R 0?	R 0?	R 0?	R 0	R 0	R 0	R 0/-?
13. Transport		R -?	R --?	R -?	R -?	R -?	R +/-?	R -?	R -?	R -?	R +/-?	R +/-?	R 0/-?
14. Greenhouse gas emissions		R +?	R +/-?	R +?	R +/-?	R +?	R +?	R -?	R -?	R -?	R 0	R +/-?	R +/-

Development Management Policies

- 6.55 The fifteen Development Management (DM) policies are generally supportive of the SA objectives and ecosystem services as shown by the number of minor and significant positive scores illustrated in **Tables 6.4** and **6.5**. This section summarises the SA findings in relation to the social, economic and environmental objectives. **Appendix 9** includes the full SA matrices for each DM Policy.

Social SA objectives

- 6.56 Overall, the DM policies are likely to have a positive effect on SA objectives 1 (health, well-being and amenity of residents) and 2 (recreation). Most of the DM policies are likely to have a positive effect on SA objective 1, with two policies expected to have significant positive effects. Policy M18: Public Health and Amenity has a significant positive effect given that the policy aim is directly in line with the SA objective. That policy is also likely to have a significant positive effect on SA objective 2, as it seeks to safeguard recreational opportunities such as open spaces and Public Rights of Way. This policy would also benefit the **Cultural** ecosystem services. Policy M17: Biodiversity and Geodiversity also has a significant positive effect on SA objective 1 because in addition to benefiting the environment, biodiversity can bring recreational, aesthetic and health benefits to a community. These positive effects would also benefit the **Cultural, Provisioning** and **Regulating** ecosystem services.
- 6.57 Most of the other DM policies would have minor positive effects on SA objectives 1 and 2 as by protecting West Sussex's environment, they protect and enhance the amenity for residents and visitors, including users of Public Rights of Way. The uncertain effects identified for Policies M20: Transport, M4: Restoration and Aftercare and M22: Cumulative Effects are because the exact effects will not be known until the planning application stage.

Economic SA objectives

- 6.58 In most cases the DM policies would not directly affect the economic objectives and ecosystem services as the DM policies focus mainly on reducing potential environmental and social impacts of minerals development. There could be a minor positive effect on SA objective 3 (local economy) from Policy M21: Aerodrome Safeguarding as it seeks to ensure that minerals working does not have adverse impacts on airports/airfields/aeroplanes or their operational integrity, which could otherwise negatively affect the economy. Policy M24: Restoration and Aftercare is also likely to have minor positive effects on SA objective 3 (local economy) as it supports a wide range of end uses and industries that contribute to the supply of material and therefore support sustainable economic growth. In addition, restoration schemes and after uses may benefit the local economy in the long term.
- 6.59 Policy M26: Maximising the use of Secondary and Recycled Aggregates is likely to have a significant positive effect on SA objective 4 (conservation and supply of mineral resources) as supporting the use of secondary/recycled aggregate will reduce the extraction of virgin materials.
- 6.60 Minor negative effects are likely for the **Supporting** ecosystem services as conserving minerals from inappropriate development to ensure sufficient minerals supply prevents soil formation and nutrient cycling.

Environmental SA objectives

- 6.61 Similar to the social SA objectives, the DM policies are likely to have an overall positive effect on the SA objectives and ecosystem services. Most of the DM policies are expected to have positive effects on SA objective 5 (landscape), with four policies having likely significant positive effects (M12: Character, M13: Landscape, M14: Historic Environment and M23: Design and Operation of Mineral Developments). The aims of Policies M12: Character and M13: Landscape align directly with this SA objective (i.e. both are seeking to protect, and where possible, enhance the landscape). The significant positive effect on SA objective 5 from Policy M14: Historic Environment is due to the close relationship between the historic environment and the landscape character of West Sussex and the South Downs National Park. As the Historic Environment policy

aims to conserve and where possible enhance heritage assets, this should contribute to the protection of the landscape character. These positive effects would also benefit the **Cultural** ecosystem services. Policy M23: Design and Operation of Mineral Developments considers the scale, form, and layout (including landscaping) of a proposed minerals development which should help to reduce potential impacts on local landscape character including skyline and topography leading to a significant positive effect.

- 6.62 The seven remaining significant positive effects in the Environmental section are due to Policies M14: Historic Environment, M15: Air and Soil, M16: Water Resources, M17: Biodiversity and Geodiversity, M19: Flood Risk Management, M20: Transport and M23: Design and Operation of Mineral Developments being directly applicable to SA objectives 6, 7, 8, 10, 11, 12, 13 and 14.
- 6.63 One uncertain effect has been identified from Policy M24: Restoration and Aftercare. This is because the policy does not specifically mention geodiversity (SA objective 7).

Table 6.4: Summary of SA findings for the Development Management policies

DM Policies SA objectives	M12: Character	M13: Landscape	M14: Historic Environment	M15: Air and Soil	M16: Water Resources	M17: Biodiversity and Geodiversity	M18: Public Health and Amenity	M19: Flood Risk Management	M20: Transport	M21: Aerodrome Safeguarding	M22: Cumulative Impact	M23 Design and Operation of Mineral Developments	M24: Restoration and Aftercare	M25: Community Benefits and Engagement	M26: Maximising use of Secondary and Recycled Aggregates
1. Health, well-being and amenity	+	+	0	+	+	++	++	+	+?	0	+	+	+?	+	0
2. Recreation	+	+	0	0	0	+	++	0	0	0	+?	+	+?	0	0
3. Local economy	0	0	0	0	0	0	0	0	0	+	+	0	+?	0	0
4. Minerals resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0	++
5. Landscape	++	++	++	+	+	+	0	+	+?	0	+	++	+?	0	0
6. Biodiversity	+	+	0	+	+	++	+	+	+?	0	+	0	+?	0	0
7. Geodiversity	0	0	0	0	0	++	0	0	0	0	+	+?	?	0	0
8. Historic environment	+	+	++	+	0	0	+	0	+?	0	+?	+	+?	0	0
9. Soil quality	0	0	0	+	0	0	0	0	0	0	+	0	+?	0	0
10. Air quality	0	0	+	++	0	0	+	0	+	0	+	+	0	0	0
11. Water resources and quality	0	0	0	+	++	0	0	+	0	0	+	+	+?	0	0
12. Flooding	0	0	0	+?	+?	0	0	++	0	0	+	+	+?	0	0
13. Transport	0	0	+?	0	0	0	+	0	++	0	+	0	0	0	0
14. Greenhouse gas emissions	0	0	0	0	0	0	0	0	+	0	+	++	0	0	+?

Table 6.5: Summary of potential impacts on ecosystem services for the Development Management policies

DM Policies SA objectives	M12: Character	M13: Landscape	M14: Historic Environment	M15: Air and Soil	M16: Water Resources	M17: Biodiversity and Geodiversity	M18: Public Health and Amenity	M19: Flood Risk Management	M20: Transport	M21: Aerodrome Safeguarding	M22: Cumulative Impact	M23: Design and Operation of Mineral Developments	M24: Restoration and Aftercare	M25: Community Benefits and Engagement	M26: Maximising use of Secondary and Recycled Aggregates
1. Health, well-being and amenity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2. Recreation	C+	C+	C0	C0	C0	C0	C++	C0	C0	C0	C+?	C+?	C+?	C0	C0
3. Local economy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4. Minerals resources	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-	S-
5. Landscape	C++	C++	C++	C+	C+	C+	C0	C+	C+?	C0	C+	C++	C+?	C0	C0
6. Biodiversity	P+ R+ C+	P+ R+ C+	P0 R0 C0	P+ R+ C+	P+ R+ C+	P+ R+ C+	P+ R+ C+	P+ R+ C+	P+? R+? C+?	P0 R0 C0	P+ R+ C+	P0 R0 C0	P+? R+? C+?	P0 R0 C0	P0 R0 C0
7. Geodiversity	C0	C0	C0	C0	C0	C0	C0	C0	C0	C0	C+	C+?	C?	C0	C0?
8. Historic environment	C+	C+	C++	C+	C+	C0	C+	C0	C+?	C0	C+?	C+	C+?	C0	C0
9. Soil quality	R0	R0	R0	R+	R+	R0	R0	R0	R0	R0	R+	R0	R+?	R0	R0
10. Air quality	R0	R0	R+	R++	R++	R0	R+	R0	R+	R0	R+	R+	R0	R0	R0
11. Water resources and quality	R0	R0	R0	R++	R+	R++	R0	R+	R0	R0	R+	R+	R+?	R0	R0

DM Policies SA objectives	M12: Character	M13: Landscape	M14: Historic Environment	M15: Air and Soil	M16: Water Resources	M17: Biodiversity and Geodiversity	M18: Public Health and Amenity	M19: Flood Risk Management	M20: Transport	M21: Aerodrome Safeguarding	M22: Cumulative Impact	M23: Design and Operation of Mineral Developments	M24: Restoration and Aftercare	M25: Community Benefits and Engagement	M26: Maximising use of Secondary and Recycled Aggregates
12. Flooding	R0	R0	R0	R+?	R +?	R +?	R0	R++	R0	R0	R+	R+	R +?	R0	R 0
13. Transport	R0	R0	R+?	R0	R 0	R 0	R+	R0	R++	R0	R+	R0	R 0	R0	R 0
14. Greenhouse gas emissions	R0	R0	R0	R0	R 0	R 0	R0	R0	R+	R0	R+	R++	R 0	R0	R +?

7 Monitoring

- 7.1 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.
- 7.2 The NPPG relating to SA states that it is not necessary to monitor everything. Instead, 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. Because of the early stage of the JMLP and the uncertainty attached to many of the potential effects identified, monitoring measures have been proposed in this SA Report in relation to all of the SA objectives in the SA framework. As the JMLP is progressed and the likely significant effects are identified with more certainty, it may be appropriate to narrow down the monitoring framework to focus on a smaller number of the SA objectives.
- 7.3 **Table 7.1** sets out a number of suggested indicators for monitoring the potential effects of implementing the JMLP. In order to make best use of existing monitoring arrangements, a number of indicators have been drawn from the JMLP itself. A number of the indicators proposed are included as suggestions from the SA team where no relevant indicator has already been included in the JMLP; therefore the indicators included in **Table 7.1** may change at subsequent stages of the JMLP preparation as the Authorities finalise the monitoring framework for the JMLP.

Table 7.1 Suggested framework for monitoring potential significant sustainability effects arising from implementation of the Joint Minerals Local Plan (January 2017)

SA Objective	Suggested indicators (those taken from the JMLP shown in <i>italics</i>)
Social	
1. Health, well-being and amenity	<p>The number and % of all permitted minerals applications that were for operational 'improvements' to existing sites that would reduce the risk to public health.</p> <p>The number and % of all minerals refusals where concerns over public health acted as part of the reason for refusal.</p> <p>The number and % of minerals permissions, which include conditions relating to: Noise, hours of operations, traffic and lighting.</p> <p><i>The number and % of minerals refusals on health and amenity grounds.</i></p> <p><i>Number of applications refused on cumulative impact grounds (including percentage against total applications received).</i></p>
2. Recreation	<p><i>The number and % of minerals refusals on health and amenity grounds.</i></p>

SA Objective	Suggested indicators (those taken from the JMLP shown in <i>italics</i>)
	The number of complaints by local tourist based businesses after site has commenced workings.
Economic	
3. Local economy	<p>Annual production of minerals. Permitted reserves of minerals.</p> <p>Amount and % of minerals consumed locally/imported per year by type.</p> <p>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.</p> <p>Employment in the Minerals sector in West Sussex and the South Downs National Park.</p> <p><i>Upward trend of minerals applications refused as a result of unacceptable impacts on aviation safety arising from the proposal.</i></p>
4. Minerals resources	<p>The number and % of minerals developments permitted upon existing sites or Preferred Areas identified within the Minerals Plan.</p> <p>The number of non-minerals developments permitted upon Preferred Areas identified within the adopted Minerals Local Plan.</p> <p>Number of non-mineral applications determined for sites within Mineral Safeguarding Areas, which required a minerals consultation.</p> <p><i>Landbank for sharp sand and gravel.</i></p> <p><i>Soft sand sales.</i></p> <p><i>Permitted soft sand reserves.</i></p> <p><i>Level of chalk reserves.</i></p> <p><i>Clay landbank at individual brickworks.</i></p> <p><i>Level of stone reserves.</i></p> <p><i>Sterilisation of important mineral resources.</i></p> <p><i>Number of planning permissions permitted per annum where the use of recycled and secondary aggregate has been considered as part of the proposal.</i></p> <p><i>Recycling of inert waste (capacity, tonnes per annum, and % of total arisings).</i></p>
Environmental	
5. Landscape	<p>Number and % of mineral applications refused in the AONBs and SDNP (including percentage against total applications received) for large scale and small scale facilities.</p> <p>Number and % of applications for minerals facilities</p>

SA Objective	Suggested indicators (those taken from the JMLP shown in <i>italics</i>)
	<p>permitted per annum within protected landscapes.</p> <p><i>Number of applications refused on character grounds per annum (including percentage against total applications received).</i></p>
6. Biodiversity	<p><i>Number of mineral applications refused on biodiversity and geodiversity grounds (including percentage against total applications received).</i></p> <p>Number and % of mineral applications with associated mitigation measures provided.</p>
7. Geodiversity	<p><i>Number and % of mineral applications refused on biodiversity and geodiversity grounds (including percentage against total applications received).</i></p> <p>Number of mineral applications with associated mitigation measures provided.</p>
8. Historic environment	<p><i>Number and % of mineral applications refused on historic grounds.</i></p> <p>Number and % of all permitted minerals applications that included conditions related to archaeology.</p> <p>Number and % of Listed Buildings and Scheduled Ancient Monuments on Buildings at Risk Register (Historic England).</p> <p>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.</p>
9. Soil quality	<p><i>The number and % of minerals applications refused on air quality, soil and water grounds.</i></p>
10. Air quality	<p><i>The number and % of minerals applications refused on air quality, soil and water grounds.</i></p> <p>The number and % of minerals approvals that included conditions concerning air pollution control.</p>
11. Water resources and quality	<p><i>The number and % of minerals applications refused on air quality, soil and water grounds.</i></p> <p>The number and % of minerals refusals where safeguarding water supplies acted as part of the reason for the refusal.</p> <p>The number and % of minerals approvals that included conditions concerning water pollution control.</p>
12. Flooding	<p><i>Applications refused on flooding grounds (including percentage against total applications received).</i></p> <p><i>Permissions granted with associated mitigation measures (including percentage against total applications received).</i></p> <p><i>Number of applications refused/permitted in flood risk zones</i></p>

SA Objective	Suggested indicators (those taken from the JMLP shown in <i>italics</i>)
	<i>2b and 3 (including percentage against total applications received).</i>
13. Transport	<p>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.</p> <p><i>The number and % of applications refused on transport grounds.</i></p>
14. Greenhouse gas emissions	<p>The number and % of minerals permissions that included non-road based transport.</p> <p>The number and % of minerals approvals that included conditions concerning air pollution control.</p> <p><i>Number of applications permitted that include low carbon energy initiatives/sources (including percentage against total applications received).</i></p>

8 Conclusions

- 8.1 The policies and site allocations in the Proposed Submission Draft JMLP (Regulation 19) (January 2017) have been subject to a detailed appraisal against the SA objectives which were developed at the scoping stage of the SA process.
- 8.2 The Proposed Submission Draft JMLP provides well-reasoned proposed policies and a clear guide to minerals development based on sound sustainable development principles. In general, the Proposed Submission Draft JMLP has been found to have a wide range of positive effects on the SA objectives, although significant negative and a number of minor negative effects have also been identified (mainly in relation to the potential for one or both of the two allocated sites (Policy M10) to affect landscape, biodiversity, water resources and flooding, but also in relation to the potential increased reliance on imports of soft sand (Policy M2), which could increase road-based transport of minerals with associated air pollution and greenhouse gas emissions). The severity of these impacts will depend very much on the nature and scale of the proposed development at the allocated sites, which cannot be known until the planning application stage, and how well proposals adhere to the development principles contained in the supporting text to Policy M11, as well as other relevant development management policies in the Proposed Submission Draft JMLP. The allocated sites have been identified for minerals development through a comprehensive site selection methodology undertaken by WSCC and SDNPA; by doing so the Authorities have sought to minimise the potential sustainability effects of minerals development in West Sussex. In addition, when the Proposed Submission Draft JMLP is considered as a whole, the SA team consider that all of the policies will work together to reduce the negative effects of minerals development.

Next Steps

- 8.3 This SA Report will be available for consultation alongside the Proposed Submission Draft JMLP during January and March 2017.
- 8.4 Following this stage any comments on the SA will be submitted to the Secretary of State along with the Proposed Submission JMLP. The SA and any comments will then be considered by an independent planning inspector who will examine the Plan and check that the SA has been undertaken in accordance with the regulations and that the Plan has taken account of the SA as appropriate. The full SA Report may need to be updated to reflect any minor changes the Authorities make to the JMLP that is submitted otherwise this SA Report will be submitted alongside the JMLP.

LUC

December 2016

Appendix 1

Consultation responses received in relation to the SA Scoping Report and SA Report (April 2014) for the Draft JMLP

Table A1.1: Consultation responses received in relation to the SA Scoping Report

Note that the comments in the final column refer to actions that were taken to address consultation comments in the final version of the SA Scoping Report (published January 2015) and references to chapters and appendices refer to that document. The updated baseline information, review of plans, policies and programmes, key sustainability issues and SA Framework and Assumptions can be found in this full SA Report (see Table 1.1).

Consultee	Response	Action/Justification
Are there any additional plans, policies or programmes that are relevant to the SA and should be included (as reviewed in Appendix 1)?		
Environment Agency	Flood and Water Management Act 2010 – Key targets and indicators highlights that the EA prepare Local Flood Risk Management Strategies. This should be amended as the responsibility sits with Lead Local Flood Authorities.	Noted. Text has been amended in Appendix 1.
Environment Agency	Water for Life and Livelihoods: River Basin Management Plan, South East River Basin District – we would recommend that you also include the River Basin Management Plan, Thames River Basin District as part of West Sussex (notably Crawley) sits within this River Basin District.	Noted. The River Basin Management Plan, Thames River Basin District has been included in Appendix 1.
Environment Agency	Groundwater protection in Southern Region – this is no longer valid. Groundwater protection is incorporated under the Water Framework Directive and as such current status and future standards are identified through the River Basin Management Plans. For an overview of the Environment Agency's policy with regard to groundwater protection we would recommend reference to Groundwater protection: Principles and Practice (GP3). This document describes our approach to the management and protection of groundwater in England and Wales. It provides a framework within which we can work with others to manage and protect groundwater. This document is available from: https://www.gov.uk/government/publications/groundwater-protection-principles-and-practice-gp3	Noted. Information relating to Groundwater protection in Southern Region has been replaced in Appendix 1 by information from Groundwater protection: Principles and Practice (GP3).

Environment Agency	Catchment Abstraction Management Strategies – please note these have been updated since the 2003 versions included in the Scoping Report. In March 2013 we published updated “Abstraction Licensing Strategies” for catchments across the country. The relevant ones for West Sussex are the Arun and Western Streams, the Adur and Ouse and the Mole catchments. These are available from: https://www.gov.uk/government/collections/water-abstraction-licensing-strategies-cams-process	Noted. The updated 2013 Abstraction Licensing Strategies for the catchment areas of the Arun and Western Streams, the Adur and Ouse, and the Mole have been included in Appendix 1.
Environment Agency	Lower Tidal River Arun Strategy – this strategy outlines recommendations for managing flood risk in the Arun Valley, from Pallingham Weir to Littlehampton and Ford. https://www.gov.uk/government/publications/lower-tidal-river-arun-flood-risk-management-scheme/lower-tidal-arun-flood-risk-management-scheme .	Noted. The Lower Tidal River Arun Strategy has been included in Appendix 1.
Environment Agency	Aldingbourne Rife Integrated Flood Risk Management Plan and Works (ARIFRM) - This will deliver a package of schemes and flood alleviation works to reduce flood risk to people and properties in the Aldingbourne Rife catchment. We will look at a holistic, catchment wide approach to flood risk management, as well as deliver environmental benefits and enhancements. Addressing flood risk in one area without addressing wider issues and looking at the interactions will not address the problems fully and could pass it on elsewhere. Looking at the catchment holistically is also more likely to identify efficiencies and better ways of managing risk, without simply building expensive “hard” engineering solutions like walls, banks and pumps.	Noted. Appendix 1 has been updated with details of what the ARIFRM will include when published, as this document is yet to be published.
Is the information provided in Chapter 3 robust and comprehensive, and provide a suitable baseline for the SA of the emerging JMLP?		
Environment Agency	Flooding and Water Resources: We are pleased to see reference to considerations of hydrogeology in this section, however, we would recommend the section includes a baseline of the current situation. A large area of West Sussex is underlain by a principal aquifer and has a large number of Source	Hydrogeology baseline information has been included in Chapter 3 under the Flood and Water Resources section. The relevant water datasets (e.g. SPZs) have not yet been obtained by WSCC and are therefore not

	<p>Protection Zones, supplying both public and private water supplies and in some places form an important source of base flow to rivers.</p> <p>It may be useful to include a map in this section to show the principal aquifer and Source Protection Zones coverage in West Sussex.</p>	<p>available for inclusion in the SA maps at this time. These datasets will be included in further stages of the SA.</p>
Environment Agency	<p>Water, Air and Soil Quality:</p> <p>We are pleased to see reference to the current status for the water bodies within West Sussex in accordance with the Water Framework Directive. We would recommend that this is explained further in accordance with the objectives of that Directive and requirement to take actions to achieve good ecological status by 2027. In addition, a further requirement of this Directive, and subsequent River Basin Management Plans, is to ensure there is no deterioration from existing status.</p>	<p>Explanations in accordance with the objectives of the EU Water Framework Directive have been included in the Water, Air and Soil Quality section in Chapter 3.</p>
Natural England	<p>The information in Chapter 3 provides a suitable baseline for the appraisal of the emerging plan. Clearly, closer examination may be needed, particularly for the assessment of the impact of significant allocations, drawing on information on the local habitat network, BAP habitats and records relating to the presence of protected species.</p>	<p>Noted. Closer examination and assessment will be undertaken through the SA process, informed by information obtained from the WSCC/SDNPA mineral site identification and assessment process.</p>
Are there any additional key sustainability issues that should be included (as set out in Chapter 4)?		
Environment Agency	<p>We are pleased to see that the key sustainability issues within our remit have been included in this section.</p>	<p>Noted.</p>
Natural England	<p>Table 4.1 (row 4) deals with the decline in biodiversity. The main focus appears to be on the condition of SSSIs. Whilst this and potential changes on associated N2K sites are particularly important, the protection of the wider habitat networks (including BAP habitats) and land used by protected species are also important. These matters should be considered in principle when</p>	<p>Noted. Table 4.1 (row 4) and Table 5.1, Objective 6 have been amended to ensure the protection of wider habitat networks (including BAP habitats) and land used by protected species are considered. These matters will be considered through the WSCC/SDNPA mineral site identification and</p>

	allocations are being assessed, to allow avoidance, or to understand the nature and scale of mitigation, or (in the worst case) to begin to draw conclusions about the feasibility, nature and scale of compensation. This point could also be reflected in Table 5.1 under Objective 6.	assessment process, which will inform the SA process.
Is the SA framework set out in Chapter 5 appropriate and include a suitable range of objectives?		
Environment Agency	The SA framework includes relevant objectives in relation to our remit and are pleased to see follow on questions that seek to derive enhancement opportunities through the policies in the Minerals Local Plan, e.g. flood storage areas and net gains in biodiversity.	Noted.
Natural England	In Table 5.1, consideration should be given to any potential air quality issues (arising from minerals traffic) on sections of road that pass close to designated sites that are sensitive to air pollution.	Noted. To ensure that consideration will also be given to potential air quality issues (arising from minerals traffic) on sections of road that pass close to designated sites that are sensitive to air pollution, a new sub-objective for SA objective 10 has been added to Table 5.1 and the assumptions for determining significance of effects for SA objective 10 amended in Appendix 2.
Are the SA assumptions defined in Appendix 2 appropriate for judging the significance of potential effects of the mineral site options?		
Environment Agency	<p>The assumptions in relation to SA objective 10 are not very clear. We would recommend that a site in SPZ1 is attributed a negative score as a minimum. We would be likely to object in principle to sites in SPZ1.</p> <p>Whilst we understand the difficulty in assessing the impact of sites on water quality outside these areas we would recommend that the SA considers certain criteria at the stage that individual sites are known in the plan making process. For example consider whether there are any environmental designations in the vicinity that may be affected by minerals working</p> <p>We would recommend that the assumptions under SA objective 11</p>	<p>Sites in SPZ1 were initially attributed a minor negative effect in the assumptions and proposed scoring for SA Objective 11 in Appendix 2. However, this has been increased to a significant negative effect in light of the comments received.</p> <p>The assessment of impacts of sites on water quality outside these areas will be informed by the HRA and is also referred to in the assumptions for SA Objective 6.</p> <p>The assumptions under SA Objective 12 in Appendix 2 have been amended to consider potential flood</p>

	also consider any potential flood risk to third parties. Whilst the assumption that certain forms of mineral extraction are appropriate in the different flood zones is correct, the risk to surrounding communities from their operation should be considered where possible. In addition you may wish to include any knowledge regarding opportunities for flood storage.	risk elsewhere, and potential opportunities for flood storage.
Natural England	Appendix 2 outlines (under objective 5) the difficulties of dealing fully with issues of landscape character. Nevertheless, decisions on strategic allocations should be informed by some work on local landscape sensitivity and a basic assessment of the potential for the development/use of allocated sites to have significant landscape and visual impact. This would help to support the choice of allocations and to identify headline concerns that will need to be considered at the detailed planning stage	Noted. WSCC/SDNPA will be carrying out a separate landscape capacity and sensitivity assessment of the potential mineral sites as part of their site selection process. Appendix 2 (under SA Objective 5) states that any relevant information from the WSCC/SDNPA landscape capacity and sensitivity study will be used to inform the scoring and justification for SA Objective 5 through the SA process. This will help to identify any potentially significant landscape and visual impacts within the SA work.

Table A1.2: Consultation responses received in relation to the SA Report (April 2016) for the Draft JMLP

Consultee	Response	Action/Justification
Statutory Consultee		
Environment Agency	No comments were made in relation to the SA.	N/A.
Historic England	No comments were made in relation to the SA.	N/A.
Natural England	The SA could include a bespoke Ecosystems Services objective, however it is recognised that there is an underlying implicit Ecosystems Services thread running through the SA.	Noted. It would not be appropriate to add an additional SA objective at this late stage in the SA process, as earlier versions of the options and policies would not have been assessed against the additional SA objective.
Natural England	<p>There are concerns surrounding para 5.117 which notes the overall negative effects on biodiversity including International, national or local designated nature conservation sites or BAP priority habitats. As the majority of sites lie within 250m of one of these designations resulting in a significant negative effect. We would like to make more substantive comments regarding the site allocations and any implications these may have for statutorily protected sites. We would be very grateful if you advise me on the most appropriate timeframe for these comments.</p> <p>We would strongly advise that impacts on irreplaceable habitats such as ancient woodland should be avoided.</p> <p>We strongly advise that opportunities to enhance priority habitats, networks of natural habitats and Green Infrastructure on a landscape scale are fully explored, both through restoration schemes and mitigation and enhancement works.</p> <p>We advise that the Mineral Local Plan should demonstrate mitigation via avoidance and reduction in any impacts on statutorily protected sites and would welcome the opportunity to provide our comment in this area.</p>	<p>The statement in regards to para 5.117 is an overarching one made on the site options (reasonable alternatives) that were considered for allocation at the Draft JMLP stage, of which only two sites have been proposed for allocation in the JMLP. All of the site options considered were subject to consultation in 2014, through the JMLP's Mineral Sites Study, which Natural England commented on.</p> <p>In addition, the two sites proposed for allocation within Policy M11 of the JMLP (Ham Farm, and Extension to West Hoathly clay pit) have a number of development principles against them, which are aimed at ensuring that key issues (such as the presence of ancient woodland) are considered fully at the planning application stage. These, coupled with the draft Development Management policies are considered to provide the protection/mitigation required over a wide range of issues, including on biodiversity and geodiversity.</p> <p>Furthermore, opportunities to enhance priority</p>

Consultee	Response	Action/Justification
		habitats are set out in the Development Management Policy M24: Restoration and Aftercare within the Draft Plan.
Natural England	We note that there is an option for Minstead West and we have expressed concern regarding this site in recent ROMP applications with respect to the adjacent Iping Common SSSI.	See comment relating to para 5.117 above. This site was considered for allocation, but not selected by the Authorities.
Other Consultee		
Denvil Coombe , Hambrook, Chichester.	<p>The consultee comments on four sites in the 'Hambrook Grouping': Slades Field, Common Road West, Common Road East and Funtington West. The consultee disagrees with the Council's RAG Assessment of these sites, as set out in the Minerals Site Selection Report (April 2016). In relation to two of the sites: Common Road East and Common Road West, the consultee also disagrees with some of the SA conclusions for Common Road East and notes that the same comments apply to Common Road West (points have been numbered for ease of reference within this table):</p> <p>(i) The SA Report states that the site scored 'minor negative' effects against most of the SA objectives including Health and Local Amenity, Landscape. According to the consultee, this is not correct and refers to his text earlier in the consultation response that describes the increased transport required and associated road widening, decrease in air quality and adverse effects on landscape.</p> <p>(ii) The SA Report states that job creation is likely to occur following the development of minerals sites. The consultee claims this is not true as if the sites were worked, a local business CEGA – who employ 350 people - would need to</p>	<p>(i) No action required: All potential mineral sites have been appraised in line with consistent assumptions for determining minor or significant effects as explained in paragraph 4.8 and Appendix 4 of the SA Report. The assumptions table explains that dust from blasting/drilling and other sources within minerals sites (e.g. haul roads, crushers, stockpiles etc.) may cause concern to residents and communities near to mineral extraction sites. However, research undertaken for the government in 1995³¹ excluded any health effects of dust generated by surface mineral operations (i.e. sand and gravel extraction and crushed rock quarries, as opposed to underground mines). Therefore, the SA Report has assumed that it is not likely that mineral extraction in West Sussex would give rise to a significant negative effect on health, but minor negative effects may be experienced or perceived by some residents' etc. living or working close to sites.</p> <p>With regards to landscape, the SA Report draws on the conclusions of the Landscape Assessment Addendum (2015), and applies a minor negative effect to sites which have an overall landscape</p>

³¹ Office of the Deputy Prime Minister (by Arup Environmental/Ove Arup and Partners). The Environmental Effects of Dust from Surface Minerals Workings, 1995.

Consultee	Response	Action/Justification
	<p>relocate.</p> <p>(iii) The consultee disagrees with the minor positive effect attributed to SA objective 4 (Conserving mineral resources) which relates to the protection of mineral resources from sterilisation from other types of development. The consultee notes this is not true as using mineral resources does not conserve them.</p> <p>(iv) The consultee agrees with the SA Report conclusion which states that both the operational and extraction processes of each of the five sites are likely to have cumulative effects, especially on the health and amenity of the local communities of Funtington, Hambrook and Woodmancote. The consultee notes that this balanced view has not been taken into account in the MSS Report.</p> <p>(v) In relation to the SA conclusion that 'The combined effect of the operational processing area and extraction at each of the five sites is likely to lead to cumulative effects in the area', the consultee asserts that the term 'cumulative' has been used incorrectly as in the absence of the processing plant, none of the extraction sites can operate.</p> <p>(vi) The consultee notes the SA Report's reference to the cumulative impacts from the Hambrook Grouping sites that are also likely in relation to air quality and traffic, including highway safety and capacity. He notes that the noise and vibration impacts of HGVs and the impacts on amenity and visual intrusion of the conveyor belt system have been omitted.</p> <p>(vii) With reference to the Ecosystem Services Conclusion that there would be no particular impact or benefit on the ecosystem services relating to objectives 1 (Health and local amenity) and 3 (Local economy), the consultee notes this is</p>	<p>sensitivity judgement of 'medium' or 'low-medium'. The justification text in Appendix 7 of the SA Report quotes from the Landscape Assessment Addendum (2015) that notes the site itself is not set in area of high sensitivity and that the landscape character and landscape value of the site is judged to be low, however its high visibility from the National Park makes it have a slightly higher sensitivity. The Assessment however also acknowledges more screening around the site can be implemented during development to reduce its visibility.</p> <p>(ii) No action required. The development of a minerals site will lead to increased employment opportunities and it is not known how this would affect the local CEGB business.</p> <p>(iii) No action required. The minor positive effect for SA objective 4 is justified because allocating a mineral site in the Minerals Local Plan would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society (which is what SA objective 4 seeks to do). However, the minor negative effect for the ecosystems services acknowledges that minerals extraction itself does not conserve mineral resources, and would impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p> <p>(iv) Noted, no action required for the SA Report.</p> <p>(v) No action required. The term cumulative is used correctly in the SA Report, and it has been assumed that the processing plant would need to</p>

Consultee	Response	Action/Justification
	<p>not true. He forecasts that there would be significant adverse impacts on people's health (noise, vibration and air pollution impacts), amenity of the communities adjacent or near to the sites, and the local economy if CEGA were to relocate.</p> <p>(viii) The consultee asserts that the Ecosystem Service minor negative impact for objective 5 (Landscape) is not true for the reasons highlighted earlier in the consultee's response (e.g. 'workings would be impossible to screen from many viewpoints, given the undulating nature of the terrain').</p> <p>(ix) With reference to the Ecosystem Services Conclusion that this site could have a minor negative impact in relation to objective 4 (Conservation of mineral resources) the consultee notes that it is inconsistent with the SA effect for the same objective (as noted in point (iii) above).</p>	<p>operate alongside any one of the Hambrook Grouping extraction sites.</p> <p>(vi) Noted. The use of conveyor belts is taken into account under the 'operation' of sites and therefore part of the assessment against SA objective 1 (health and amenity). The potential amenity effects of HGVs are covered in SA objective 13.</p> <p>(vii) No action required. Chapter 4 in the SA Report explains how consideration of ecosystem services has been addressed in the SA of the JMLP and Table 4.2 in the SA Report identifies which of the four main ecosystem services groups are relevant to each SA objective, and shows how benefits for or impacts on the relevant ecosystems services are considered as part of the SA at the same time as predicting the sustainability effects of the JMLP. For SA objective 1 Table 4.2 notes that its aim (i.e. Protection of health and well-being) would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services. Similarly, for SA objective 3, Table 4.2 notes that achievement of the SA objective (i.e. Protection of the local economy) would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p> <p>(viii) The minor negative impact on Cultural ecosystem services reflects the minor negative effect identified for SA objective 5, which is based</p>

Consultee	Response	Action/Justification
		<p>on the findings of the Landscape Assessment Addendum as explained above under point (i).</p> <p>(ix) No action required. See justification response to point (iii) above.</p>

Appendix 2

Review of relevant plans, policies and programmes

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
INTERNATIONAL				
EU Directives				
<i>SEA Directive 2001</i> Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment	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.
<i>The Birds Directive 2009</i> Directive 2009/147/EC is a codified version of Directive 79/409/EEC as amended	Requires the preservation, maintenance, and re-establishment of biotopes and habitats to include the following measures: <ul style="list-style-type: none"> • Creation of protected areas. • Upkeep and management in accordance with the ecological needs of habitats inside and outside the protected zones. • Re-establishment of destroyed biotopes. • Creation of biotopes. 	No targets or indicators.	Policies should make sure that the upkeep of recognised habitats is maintained and not damaged from development. Should also avoid pollution or deterioration of habitats or any other disturbances affecting birds.	Include sustainability objectives for the protection of birds.
<i>The Waste Framework Directive 2008</i> Directive 2008/98/EC on waste	Aims to reduce landfill and associated greenhouse gas emissions through increasing waste prevention and recycling rates and encouraging use of waste as a secondary resource. Applies a 5-step hierarchy of waste: prevention – reuse – recycling – recovery – disposal.	Sets targets for recycling rates; 50% recycling rates for household waste and 70% for C&D waste by 2020.	Plan should reflect the waste hierarchy. Plan should make provision for sufficient recycling facilities to ensure targets can be met and encourage the use of secondary aggregates.	Consider objectives to provide an adequate supply of suitable waste facilities, to reduce waste , and to reduce waste sent to landfill.
<i>The Water Framework Directive 2000</i> Directive 2000/60/EC establishing a framework for community action in the field of water policy	Protection of inland surface waters, transitional waters, coastal waters and groundwaters.	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 minimise the impact on water quality.
<i>The Bathing Water</i>	The revised Bathing Water Directive entered into	There is a requirement for all	Plan must adhere to the	Sustainability objectives

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
<i>Quality Directive 2006</i> Directive 2006/7/EC on protection of public health in bathing waters	force in March 2006. The overall objective of the revised Directive remains the protection of public health whilst bathing.	bathing waters to be classed as 'sufficient' by 2015.	requirements of the Directive, as appropriate.	should reflect the Directive requirements and protect the quality of bathing waters.
<i>The Drinking Water Directive 1998</i> Directive 98/83/EC on the quality of water intended for human consumption	Protect human health from the adverse effects of any contamination of water intended for human consumption by ensuring that it is wholesome and clean.	Member States must set values for water intended for human consumption.	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 water quality.
<i>The Air Quality Framework Directive 2008</i> Directive 2008/50/EC on ambient air quality assessment and management	Avoid, prevent and reduce harmful effects of ambient noise pollution on human health and the environment.	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 maintain and enhance air quality.
<i>The Habitats Directive 1992</i> Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora	Promote the maintenance of biodiversity taking account of economic, social, cultural and regional requirements. Conservation of natural habitats and maintain landscape features of importance to wildlife and fauna.	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 maintain the natural environment and important landscape features.
<i>EU Management of Waste from Extractive Industries</i> (2006/21/EC)	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. The main elements of the Directive are: <ul style="list-style-type: none"> • Conditions for operating permits. • General obligations concerning waste management. • The obligation to characterise waste before 	No targets or indicators.	Plans should clearly recognise that some minerals development can cause pollution and harm human health where they produce dangerous substances.	Include sustainability objectives that encourage recycling and the prudent use of natural resources and the protection of the environment. Also promote a reduction in water and soil pollution.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	<p>disposing of it or treating it.</p> <ul style="list-style-type: none"> • 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. 			
European plans, policies and programmes				
<i>EU Seventh Environmental Action Plan to 2020</i>	<p>The EU's objectives in implementing the programme are:</p> <p>(a) To protect, conserve and enhance the Union's natural capital;</p> <p>(b) To turn the Union into a resource-efficient, green and competitive low-carbon economy;</p> <p>(c) To safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing;</p> <p>(d) To maximise the benefits of the Union's environment legislation;</p> <p>(e) To improve the evidence base for environment policy;</p> <p>(f) To secure investment for environment and climate policy and get the prices right;</p> <p>(g) To improve environmental integration and policy coherence;</p> <p>(h) To enhance the sustainability of the Union's cities;</p> <p>(i) To increase the Union's effectiveness in confronting regional and global environmental challenges.</p>	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.
<i>Closing the Loop - An EU action plan for the Circular Economy 2015 (European Commission)</i>	This Circular Economy Package aims to maximise product lifecycles through greater recycling and re-use.	No targets or indicators.	Develop policies that support the use of recycling and re-use of materials over the use of virgin extraction.	Include sustainability objectives to conserve minerals resources.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
<i>European Landscape Convention 2000</i>	To promote landscape protection, management and planning, and to organise European co-operation on landscape issues.	No targets or indicators.	Plan should support the protection, management and planning of landscape, recognising landscape as an essential component of people's surroundings.	Include sustainability objectives to protect, manage and plan for landscape provision.
Other international plans, policies and programmes				
IPCC's Fourth Assessment Report on Climate Change (IPCC, 2007) ³²	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.
Johannesburg Declaration on Sustainable Development (2002)	Commitment to building a humane, equitable and caring global society aware of the need for human dignity for all. Areas of focus include: <ul style="list-style-type: none"> • 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. • Significantly reduce the rate of biodiversity loss by 2010. 	To promote greater resource efficiency and increase energy efficiency.	Develop policies that take account of the Declaration.	Include sustainability objectives to enhance the natural environment and promote renewable energy and energy/resource efficiency.
Aarhus Convention (1998)	Established a number of rights of the public with regard to the environment. Local authorities should provide for: The right of everyone to receive environmental information The right to participate from an early stage in	No targets or indicators.	Develop policies that take account of the Convention.	Ensure that the public are involved and consulted at all relevant stages of SA production.

³² IPCC (2007) Fourth Assessment Report on Climate Change.

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	environmental decision making The right to challenge in a court of law public decisions that have been made without respecting the two rights above or environmental law in general.			
Ramsar Convention- Convention on Wetlands of International Importance (1971)	To promote the conservation and wise use of all wetlands through local, regional and national actions and international co-operation, as a contribution towards achieving sustainable development throughout the world.	The number of Ramsar sites being designated in the UK.	Plan should promote the conservation and make wise use of all wetland areas.	Consider inclusion of objectives which aim to promote conservation and wise use of wetland areas.
NATIONAL				
White Papers				
Natural Environment White Paper, 2011 <i>The Natural Choice: securing the value of nature</i> (note that there are a number of implementation updates from 2011-2014 which explain government progress on the 92 commitments)	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.
Water White Paper, 2011 <i>Water for Life</i>	Objectives of the White Paper are to: <ul style="list-style-type: none"> Paint a clear vision of the future and create the conditions which enable the water sector and water users to prepare for it; Deliver benefits across society through an ambitious agenda for improving water quality, working with local communities to make early improvements in the health of our rivers by reducing pollution and tackling unsustainable abstraction; 	No targets or indicators.	Ensure that site allocations and policies will support the wise use of water, and improvement of water quality.	Include sustainability objectives that relate to water quality and quantity.

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	<ul style="list-style-type: none"> Keep short and longer term affordability for customers at the centre of decision making in the water sector; Work with water companies, regulators and other stakeholders to build understanding of the impact personal choices have on the water environment, water resources and costs; and Set out roles and responsibilities – including where Government will take a stronger role in strategic direction setting and assessing resilience to future challenges, as well as clear expectations on the regulators. 			
Rural White Paper 2000, <i>Our Countryside: The Future – a fair deal for rural England</i>	<p>Facilitate the development of dynamic, competitive and sustainable economies in the countryside.</p> <p>Conserve and enhance rural landscapes. Increase opportunities for people to get enjoyment from the countryside.</p>	No targets or indicators.	<p>Set out clear economic visions and objectives.</p> <p>Ensure the protection of the landscape and support recreation and access to the countryside.</p>	<p>Include a sustainability objective relating to strengthening the economy, and objectives relating to landscape and recreation/access to the countryside.</p>
Policies and Strategies				
DCLG (2012) National Planning Policy Framework <i>The NPPG Guidance published in March 2014 contains more detailed guidance on mineral planning issues and can be found at http://planningguidance.</i>	Presumption in favour of sustainable development.	No targets or indicators.	Development plan has a statutory status as the starting point for decision making.	Sustainability appraisal should be an integral part of the plan preparation process, and should consider all the likely significant effects on the environment, economic and social factors.

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planningportal.gov.uk/blog/guidance/minerals/	Building a strong, competitive economy.	No targets or indicators.	Set out clear economic visions for that particular area.	Include a sustainability objective relating to strengthening the economy.
	Meeting the challenge of climate change, flooding, and coastal change.	No targets or indicators.	Use opportunities offered by new development to reduce causes/impacts of flooding.	Include a sustainability objective relating to climate change mitigation and adaption.
	Conserving and enhancing the natural environment.	No targets or indicators.	Recognise the wider benefits of biodiversity.	Include a sustainability objective relating to the conservation and enhancement of the natural environment.
	Conserving and enhancing the historic environment	No targets or indicators.	Sustain and enhance heritage assets and put them to viable uses consistent with their conservation.	Include a sustainability objective relating to the conservation of historic features.
	Facilitating the use of sustainable materials.	No targets or indicators.	Ensure that there a sufficient supply of material for the country's needs. Encourage prior extraction of minerals where practicable and environmentally feasible. Plan must not identify new site of extensions of sites for peat extraction. Take account of the contribution that	Include a sustainability objective relating to sustainable mineral extraction.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
			substitute, secondary or recycled materials and minerals waste can make to the supply before considering primary extraction. Set out environmental criteria in line with other NPPF policies.	
DEFRA (2011) <i>Biodiversity 2020: A strategy for England's wildlife and ecosystem services</i>	The strategy aims to guide conservation efforts in England up to 2020, and move from a net biodiversity loss to gain. The strategy includes 22 priorities which include actions for the following sectors: <ul style="list-style-type: none"> • Planning and Development; • Water Management; • Marine Management and • Air Pollution 	The strategy develops goals for 2020 and 2050, based on Aichi Targets set at the Nagoya UN Biodiversity Summit in October 2010.	Develop policies that promote conservation and enhancements of biodiversity.	Include sustainability objective that relates to biodiversity .
DEFRA (2011) <i>Securing the Future: Delivering UK Sustainable Development Strategy</i>	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: <ul style="list-style-type: none"> • 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 .
DEFRA (2007) <i>The Air Quality Strategy for England, Scotland, Wales and Northern Ireland</i>	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 .
DEFRA (2006) <i>Natural</i>	The lists have been prepared by the Secretary of	The extensive lists of habitats	The plan should further	The SA Framework and

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<i>Environments and Rural Communities Act – Section 41: List of Habitats and Species of Principal Importance in England 2008.</i>	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 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.	and species are available on the DEFRA website at: http://www.defra.gov.uk/wildlife-countryside/biodiversity/sect41-nerc.htm	the conservation of the habitats and species on the list.	particularly the SA Objectives and sub-objectives focusing on biodiversity should reflect the requirements of the NERC Act.
The Conservation of Habitats and Species Regulations (2010) (as amended)	The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', 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.
English Heritage (2008): <i>Minerals Extraction and the Historic Environment</i>	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	No key targets (as yet).	Ensure English Heritage's formal policy on mineral extraction is taken into account in the development of the MLP.	Include sustainability objectives that consider the impacts upon the historic environment.

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	<p>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:</p> <ul style="list-style-type: none"> • Sustainability and supply • Safeguarding the industry's heritage • Impacts and mitigating of current and future extraction • Maintaining historic fabric and local distinctiveness 			
English Heritage (2008): <i>Mineral Extraction and Archaeology: A Practice Guide</i>	<p>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:</p> <ul style="list-style-type: none"> • 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 respects. 	No key targets (as yet).	Ensure the best practice is taken into account in the development of the LDF.	Include sustainability objectives that consider the impacts upon archaeology .
DCLG (2012): <i>Guidance on the Managed</i>	The Managed Aggregate Supply System has provided the mechanism to deliver long term	None	There is a requirement to produce a Local Aggregate	Include a sustainability objective that considers

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<i>Aggregate Supply System</i>	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.		Assessment. This will contribute towards figures within the MLP.	the impacts of the plan on the mineral resource .
Collation of the Results of the 2009 Aggregate Mineral Survey for England and Wales.	The report provides comprehensive information for monitoring and facilitating aggregates provision at 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 sub region. 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.	No targets, but indicates that the South East is the largest producer of sand and gravel.	Develop appropriate and sustainable policies in the light of the survey results.	Include a sustainability objective that ensures sufficient mineral provision for the County.
DEFRA (2011): <i>Marine Policy Statement</i>	The Marine Policy Statement (MPS) is the framework for preparing Marine Plans and taking decisions affecting the marine environment. It will contribute to the achievement of sustainable development in the United Kingdom marine area. The MPS will facilitate and support the formulation of Marine Plans, ensuring that marine resources are used in a sustainable way	None. The MPS refers mainly to what Marine Plans will need to address, which includes the need to make provision within Marine Plans for a level of supply of marine sand and gravel that ensures that marine aggregates (along with other sources of aggregates, including recyclates)	While the MLP will not contain any policies relating to where and how marine aggregates will be extracted, it will include policies relating to safeguarding infrastructure such as wharves where marine aggregates will be	Include a sustainability objective that enables consideration of indirect effects on coastal hydrology and biodiversity associated with landing of marine-won aggregates .

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	<p>in line with the high level marine objectives and thereby:</p> <ul style="list-style-type: none"> • Promote sustainable economic development; • Enable the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects; • Ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and protects marine habitats, species and our heritage assets; and • Contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues. <p>The MPS states that marine plans will need to be integrated with terrestrial development plans (such as the MLP), and states that integration of marine and terrestrial planning will be achieved through:</p> <ul style="list-style-type: none"> • Consistency between marine and terrestrial policy documents and guidance. Terrestrial planning policy and development plan documents already include policies addressing coastal and estuarine planning. Marine policy guidance and plans will seek to complement rather than replace these, recognising that both systems may adapt and evolve over time; • Liaison between respective responsible authorities for terrestrial and marine planning, including in plan development, implementation and review stages. This will help ensure, for example, that developments in the marine environment are supported by the appropriate 	<p>contribute to the overarching Government objective of securing an adequate and continuing supply to the UK market for various uses.</p> <p>West Sussex falls into marine plan area 6 out of 11 Marine Plan Areas in the UK. All marine plan areas are scheduled to have a plan by 2021. However, only the Draft Vision and Objectives for the South marine plan areas (including Area 6) have to date been published (see below).</p>	<p>landed. Therefore, the MLP will need to have regard to any policies in the relevant Marine Plan making provision for supply of marine aggregates, and any indirect effects that could arise from operation of wharves the receive imports of marine-won aggregates.</p>	

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	<p>infrastructure on land and reflected in terrestrial development plans, and vice versa; and</p> <ul style="list-style-type: none"> • Sharing the evidence base and data where relevant and appropriate so as to achieve consistency in the data used in plan making and decisions. 			
Marine Management Organisation (2014): <i>Draft Vision and Objectives for the South Inshore and South Offshore Marine Plan Areas</i>	The South marine plan contributes to the UK's vision for its marine area to be 'clean, healthy, safe, productive and biologically diverse oceans and seas'. This draft vision requires the South Inshore and South Offshore Marine areas to be sustainably used and continue to contribute to economic and social development by 2036.	<p>In order to achieve its vision, this plan sets out 14 draft objectives which includes:</p> <ul style="list-style-type: none"> • Objective 3 - To safeguard space for the natural marine environment to enable continued provision of ecosystem goods and services, and adaption to climate change. • Objective 4 - To support achievement of good environmental status through improving the evidence base and reducing the impacts of proposals, development and activities on mobile species. <p>These objectives address issues concerning the growth of industry in areas that could harm the natural marine environment.</p>	Plan should include policies that support marine mineral works that consider other marine activities and mitigate any environmental and/or ecological adverse impacts.	Objectives should reflect the draft vision and objectives and seek to protect the marine environment .
HM Government (2009): <i>The UK Low Carbon Transition Plan</i>	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	<p>The plan includes a 5-point Action Plan covering the following areas:</p> <ul style="list-style-type: none"> • Protecting the public from immediate risk; • Preparing for the future; 	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 .

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	budgets to 2022 to be met.	<ul style="list-style-type: none"> 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. 		
HM Government (2011): <i>Carbon Plan: Delivering our low carbon future</i>	The Carbon Plan is a Government wide plan of action on climate change, including domestic and international activity.	The plan includes a range of sectorial 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.
DEFRA (2010): <i>English National Parks and the Broads UK Government Vision and Circular.</i>	The purpose of this circular, which applies only in England, is to provide updated policy guidance on the English National Parks (including the South Downs in West Sussex) and the Broads ('the Parks'). This circular has been produced to create a vision to 2030 for National Parks.	None	Plan should support the vision for the South Downs National Park. Key considerations include: conservation and enhancement of the natural beauty, wildlife and cultural heritage of the SDNP and promotion of opportunities for the understanding and enjoyment of the special qualities of the SDNP by the public.	Objectives should reflect the aims for the SDNP set out in the Strategy and Action Plan.
Natural England (2010): <i>England's statutory landscape designations: a practical guide to your duty of regard</i>	Conservation and enhancement of the natural beauty, wildlife and cultural heritage of the SDNP and promotion of opportunities for the understanding and enjoyment of the special qualities of the SDNP by the public.	None	Plan should have regard to the duties of the relevant authorities of the purposes of National parks and AONB. Plan should support the vision for the South Downs National Park.	Objectives should reflect the vision and objectives of the SDNP and AONB.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
			Key considerations include conservation and enhancement of the natural beauty, wildlife and cultural heritage of the SDNP and promotion of opportunities for the understanding and enjoyment of the special qualities of the SDNP by the public.	
DEFRA(2007): <i>A Strategy for England's Trees, Woods and Forests</i>	<p>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 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.</p> <p>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.</p> <p>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</p>	<p>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; Access to and use of woodland; Trends in all plants and ancient woodland indicator plants.</p>	<p>Plan should to promote the sustainable management of our existing woods and forests.</p> <p>Plan should, where appropriate, seek a steady expansion of woodland areas to provide more benefits for society and our environment.</p>	<p>Consider inclusion of objectives to promote sustainable management of our existing woods and forests.</p> <p>Consider inclusion of objectives which aim to promote the expansion, enjoyment and understanding of woodland areas.</p>

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	woodland products and ecosystem services where this will deliver identifiable public benefits, nationally or locally, including the reduction of carbon emissions.			
DEFRA (GP3): <i>Underground, Under threat – Groundwater Protection: Policy and Practice</i>	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 .
JNCC (2011) <i>The Geological Conservation Review in the Context of the Wider Earth Heritage Conservation Effort</i>	To identify and describe the most important geological sites in Britain by: <ul style="list-style-type: none"> • Maintaining geological SSSIs • Expanding the RIGS network • Developing conservation techniques • Improving documentation 	None	Plan should take account of the importance of both designated and non-designated notable geological sites and features.	Objectives should protect and conserve sites of geological conservation importance .
Legislation				
<i>Flood and Water Management Act 2010</i>	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. Lead Local Flood Authorities 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 .
<i>Climate Change Act 2008</i>	The Climate Change Act 2008 introduced a statutory target of reducing carbon emissions.	Target of reducing carbon emissions by 80 per cent below 1990 levels by 2050, with an interim target of 34% by 2020.	Planning makes a significant contribution to both mitigating and adapting to climate change through its ability to influence the location, scale, mix and character of	Objectives should reflect the aims set in the Climate Change Act to reduce carbon emissions .

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
			development. The plan should include policies that contribute towards achieving lower carbon emissions and greater resilience to the impacts of climate change.	
LOCAL				
West Sussex County Council (2012): <i>An Economic Strategy for West Sussex 2012-2020</i>	Sets out seven strategic priorities for the economy of West Sussex, including the following which may be relevant to the mineral plan: <ul style="list-style-type: none"> • Make the best use of land and property to support a robust and sustainable economy • Support local people to acquire the skills that the economy needs. 	None of the strategic outcomes are relevant to the MLP	Plan should take account of the fact the minerals developments need to make a contribution to a sustainable economy in West Sussex	Include an SA objective that promotes a resilient and sustainable local economy.
Environment Agency (2009): <i>Water for Life and Livelihoods: River Basin Management Plan, South East River Basin District</i>	Improved water quality within the South East River Basin District.	To meet the requirements of the WFD: <ul style="list-style-type: none"> • Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters; • Aim to achieve at least good status for all water bodies by 2015. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status by 2021 or 2027; • Meet the requirements of Water Framework Directive protected areas; • Promote sustainable use of 	Increasing percentage of river length to achieve good environmental status by target dates of 2015, 2021 and 2027.	Consider inclusion of objective to protect and enhance water quality.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
		<p>water as a natural resource;</p> <ul style="list-style-type: none"> • Conserve habitats and species that depend directly on water; • Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment; • Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; • Contribute to mitigating the effects of floods and droughts. 		
Environment Agency (2009): <i>Water for Life and Livelihoods: River Basin Management Plan, Thames River Basin District</i>	Focuses on the protection, improvement and sustainable use of the water environment.	<p>To meet the requirements of the WFD:</p> <ul style="list-style-type: none"> • Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters; • Aim to achieve at least good status for all water bodies by 2015. Where this is not possible and subject to the criteria set out in the Directive, aim to achieve good status by 2021 or 2027; • Meet the requirements of Water Framework Directive 	Increasing percentage of river length to achieve good environmental status by target dates of 2015, 2021 and 2027.	Consider inclusion of objective to protect and enhance water quality.

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		<p>protected areas;</p> <ul style="list-style-type: none"> Promote sustainable use of water as a natural resource; Conserve habitats and species that depend directly on water; Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment; Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; Contribute to mitigating the effects of floods and droughts. 		
West Sussex County Council (2011): <i>West Sussex Transport Plan 2011-2026</i>	<p>The main objective of this Plan is to improve quality of life for the people of West Sussex through four key strategies to maintain, manage and invest in transport:</p> <ul style="list-style-type: none"> promoting economic growth tackling climate change 	<p>The West Sussex Transport Plan 2011-2026 contains a range of monitoring indicators. Issues covered include the following: Congestion, accessibility, road traffic accidents, road and footway maintenance, conditions of highway structures, road flooding,</p>	<p>Plan should include policies which should assist in the promotion of an efficient economy and the achievement of sustainable economic growth</p> <p>Plan should include policies which should aim to reduce traffic growth, pollution and congestion in order to protect and enhance the built and natural environment</p>	<p>Consider objectives aiming to minimise use of rural roads and maximise use of the strategic road network and lorry route networks</p> <p>Consider objectives to sustain economic growth through the provision of an adequate supply of construction and other materials.</p> <p>Consider objectives to reduce the emission of</p>

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				greenhouse gases
West Sussex County Council (2014): West Sussex Waste Local Plan	Policy W9 permits the depositing of non-inert and inert waste to land including the restoration of mineral workings, and providing that any important mineral reserves would not be sterilised.	None	As this issue is covered in the West Sussex Waste Local Plan, it will not need to be included in the MLP	Consider inclusion of objective to avoid mineral reserve sterilisation.
West Sussex County Council (2013): <i>Building A Sustainable Future: A strategy for delivering the corporate priority</i>	This Strategy focuses on four key priority areas that address the main challenges facing West Sussex County Council as an authority. The four priorities for action are to: <ul style="list-style-type: none"> • Reduce carbon emissions; • Adapt to a changing climate; • Use resources efficiently and effectively; • Make sustainability business as usual. 	The Strategy contains information about the challenges of these areas and points of action, including clear and challenging targets against each priority.	Plan to include policies which support reductions in carbon emissions, and consider adaptation to a changing climate.	Consider inclusion of objectives to support the: reduction in carbon emissions, adaptation to a changing climate and efficient use of resources.
West Sussex Environment and Climate Change Board (2015): <i>Using Less, Living Better Action Plan</i>	The Board is made up of representatives across all sectors and aims to ensure that shared environment and climate change objectives and priorities, both now and in the future, are fully understood, effectively communicated and embedded in the development and delivery of policy and proposals across the County. In 2010, four thematic subgroups were set up to work on: <ul style="list-style-type: none"> • Low carbon and energy; • Green economy and skills; • Environmental quality; and <ul style="list-style-type: none"> • Sustainable transport and infrastructure. 	Board partners have signed up to the commitment to help reduce emissions in West Sussex by at least 80% by 2050, use natural resources wisely and ensure that people, landscape and wildlife are able to adapt to climate change.	Plan to include policies which support the vision and the commitments of the Board.	To include objectives which encourage waste minimisation and increase recycling and recovery.
West Sussex County Council (2008): <i>Sustainable Community Strategy for West Sussex 2008-2020</i>	Reduce the carbon footprint of West Sussex Improving waste management to reduce waste generation and increase recycling. Making best appropriate use of innovation and new technology to reduce harmful emissions	None	Promote the reduction of harmful emissions and waste creation. Policies should protect the natural and historic environment.	Consider objective to reduce harmful emissions. Consider objective to protect the natural and historic

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
				environment.
<p>Sussex Biodiversity Partnership (2014) <i>Sussex Biodiversity Action Plan</i> <i>Can be found online at http://www.biodiversitysussex.org.uk/about/</i></p>	<p>To maintain and, where practicable, enhance the wildlife and habitats that give Sussex its character and natural diversity To identify priority habitats and species that which are important in Sussex and/or where there is a special responsibility to care for something which is important on a national or international scale To set realistic but ambitious targets and timescales for priority habitats and species and to monitor progress of action plans against those targets To ensure that biodiversity action continues as a joint initiative, evolving a dynamic framework for nature conservation To raise public awareness and encourage involvement in biodiversity action.</p>	<p>Monitoring of Biodiversity Opportunity Areas. Sussex Biodiversity Record Centre inventory statistics for species and habitats e.g. Rare Species Inventory Biodiversity Action Plan Species Inventory Pond Inventory</p>	<p>Plan should include policies to enhance, where possible, the wildlife and habitats that give West Sussex its character and natural diversity Plan should include policies that are as consistent, as practicably possible, with a dynamic nature conservation framework.</p>	<p>Consider inclusion of objectives to protect and, enhance biodiversity and natural character.</p>
<p>Capita Symonds (2010): <i>West Sussex Strategic Flood Risk Assessment (SFRA)</i></p>	<p>The main objective of the SFRA is to provide flood information:</p> <ul style="list-style-type: none"> • So that an evidence based and risk based sequential approach can be adopted when making planning decisions, in line with Planning Policy Statement 25 (Development and Flood Risk) – PPS25; • That it is strategic in that it covers a wide spatial area and looks at flood risk today and in the future; • That supports sustainability appraisals of the local development frameworks; and • That identifies what further investigations may be required in flood risk assessments for specific development proposals. 	<p>The assessment investigates flood risk issues for each specific site and makes recommendations.</p>	<p>The Plan must take into account the SFRA's sequential testing and guidance for selecting suitable sites for minerals development.</p>	<p>Consider inclusion of objectives related to flood risk.</p>
South Downs National	The Management Plan breaks down the Vision of	Indicators are included for the 11	Plan should include policies	Consider inclusion of

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
Park (2013). <i>Partnership Management Plan: Shaping the future of your South Downs National Park 2014-2019</i> .	<p>the plan into 11 outcomes that describe how the vision is being achieved. These include:</p> <p>Outcome 1: The landscape character of the National Park, its special qualities and local distinctiveness have been conserved and enhanced by effectively managing land and the negative impacts of development and Cumulative change.</p> <p>Outcome 2: There is increased capacity within the landscape for its natural resources, habitats and species to adapt to the impacts of climate change and other pressures.</p> <p>Outcome 3: A well-managed and better connected network of habitats and increased population and distribution of priority species now exist in the National Park.</p> <p>Outcome 4: The condition and status of cultural heritage assets and their settings is significantly enhanced, many more have been discovered and they contribute positively to local distinctiveness and sense of place.</p> <p>Outcome 5: Outstanding visitor experiences are underpinned by a high quality access and sustainable transport network providing benefits such as improved health and wellbeing.</p> <p>Outcome 6: There is widespread understanding of the special qualities of the National Park and the benefits it provides.</p> <p>Outcome 7: The range and diversity of</p>	<p>outcomes. The key indicators relevant to the Minerals Local Plan and SA are included below:</p> <p>Outcome 1: Character of the landscape, including historic elements, is maintained.</p> <p>Percentage of the National Park that is relatively tranquil for its area.</p> <p>Percentage area considered to have a dark night sky.</p> <p>Percentage of designated or notified Geological / Geomorphological Sites managed in better condition.</p> <p>Outcome 2: Percentage of rivers and groundwater bodies with water available for Abstraction.</p> <p>Total greenhouse gas emissions in the National Park.</p> <p>Outcome 3: Area, condition and connectivity of target priority habitats.</p> <p>Population and distribution of target priority species.</p>	<p>to protect and, where possible, enhance the character, special qualities, condition, distinctiveness and environmental quality of the South Downs National Park.</p>	<p>objectives to protect and enhance biodiversity, geodiversity, landscape character, amenity and cultural heritage.</p>

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	<p>traditional culture and skills has been protected and there is an increase in contemporary arts and crafts that are inspired by the special qualities of the National Park.</p> <p>Outcome 8: More responsibility and action is taken by visitors, residents and businesses to conserve and enhance the special qualities and use resources more wisely.</p> <p>Outcome 9: Communities and businesses in the National Park are more sustainable with an appropriate provision of housing to meet local needs and improved access to essential services and facilities.</p> <p>Outcome 10: A diverse and sustainable economy has developed which provides a range of business and employment opportunities, many of which are positively linked with the special qualities of the National Park.</p> <p>Outcome 11: Local people have access to skilled employment and training opportunities.</p> <p>Policy 27: Protect and Enhance the National Park's special qualities through the management and restoration of minerals sites.</p>	<p>Distributions of target non-native invasive species.</p> <p>Percentage of water bodies achieving 'good' or 'high' status or potential.</p> <p>Outcome 4: Percentage of heritage assets 'at risk'.</p> <p>Number of new heritage assets in the National Park added to Historic Environment Record.</p> <p>Outcome 5: Percentage of Public Rights of Way (PRoW) that is 'easy to use' or in good condition.</p> <p>Number of routes promoted as accessible.</p> <p>Percentage of visitors who felt very satisfied with the visitor experience.</p> <p>Outcome 6: Percentage of people who are aware of why the National Park is a special place.</p> <p>Percentage of schools within a 5km radius of the boundary using the National Park for learning outside of the classroom experiences at least once a year.</p>		

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
		<p>Outcome 7: Number of courses in traditional crafts</p> <p>Outcome 8: Average public water supply consumption for areas supplied by sources within the National Park.</p> <p>Average annual daily traffic flows on National Park roads.</p> <p>Outcome 9: Percentage of communities with access to natural green space.</p> <p>Outcome 10: Number and diversity of business types that exist within the National Park.</p> <p>Outcome 11: Skills levels of employees in the National Park.</p>		
South Downs National Park. <i>South Downs National Park Local Plan</i>	<p>The SDNPA is preparing its Local Plan, which will replace all existing planning policies across the National Park. Until this is adopted, the 'Development Plan' for the SDNPA consists of the saved policies of 11 inherited Local Plans and 1 adopted Core Strategy.</p> <p>The SDNPA undertook its Options Consultation, which represents the first stage in developing</p>	None.	Plan should include policies to protect and, where possible, enhance the character, special qualities, condition, distinctiveness and environmental quality of the South Downs National	Consider inclusion of objectives to protect and enhance biodiversity, geodiversity, landscape character, amenity and cultural heritage.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	the Local Plan, from 28th February to 30 th April 2014. The consultation identified 55 key issues and a number of options for how the Local Plan could deal with these issues. Therefore, at this stage the Local Plan is not advanced enough to set out key objectives relevant to the Minerals Local Plan and SA. However, the options consultation outlines how the policies in the Local Plan will contribute to the achievement of the Vision and help deliver many of the objectives of the South Downs National Park Management Plan.		Park.	
South Downs National Park. <i>South Downs Way Ahead Nature Improvement Area</i> ³³	In February 2012, the SDNPA was awarded £608,000 by the Secretary of State for the Environment towards a £3 million plan to protect, restore and reconnect endangered chalk downland in the National Park. The South Downs Way Ahead Project brings together 29 organisations, led by the SDNPA, to trail blaze the Government's new Nature Improvement Area (NIA) scheme to protect wildlife habitats and the environmental, economic and social benefits they bring.	None	Plan should include policies to protect and, where possible, restore and connect chalk downland in the South Downs National Park.	Consider inclusion of objectives to protect and enhance biodiversity, in particular the chalk downland of the South Downs National Park.
Brighton & Lewes Downs Biosphere Partnership. <i>Brighton and Lewes Downs Biosphere Project</i> ³⁴	The Brighton & Lewes Downs Biosphere covers almost 400 square kilometres of land and sea between the River Adur and the River Ouse, bringing together the three environments of countryside, coast, and city and towns under one united approach. The Brighton & Lewes Downs Biosphere aims to serve as a world-class demonstration area of	None	Plan should include policies that take account of and seek to protect the habitats and species within the biosphere area.	Consider inclusion of objectives to protect and enhance biodiversity, in particular the habitats and species within the biosphere area.

³³ <http://www.southdowns.gov.uk/looking-after/biodiversity/south-downs-way-ahead-nature-improvement-area>

³⁴ <http://biospherehere.org.uk/where-on-earth/>

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	how we might live better in the future, in greater harmony with our local environment by bringing people and nature closer together. The Biosphere objectives are “to look after and improve the local environment, whilst at the same time developing local communities in a sustainable way, and promoting better understanding and engagement by people with the world on our doorstep”.			
Environment Agency (2013): <i>Groundwater protection: Principles and practice (GP3)</i>	Encourage practices to prevent or mitigate impacts on groundwaters (pollutants and over abstraction). Encourage cooperation between bodies with responsibilities for protecting groundwaters. Provide information and background on groundwater protection in England and Wales.	Indicators relate to the Water Framework Directive's (WFD) requirement that all groundwater bodies (GWBs) are of 'good' status in terms of water quality. This status is based on thresholds for the chemical constituents of groundwater and their impact on ecosystems. Good pollution prevention practice can involve influencing the siting and construction of many activities through role as a consultee to the development planning process.	Plan should include policies consistent with protecting all groundwater resources from pollution and long-term depletion Plan should include policies that should where feasible, remediate historic groundwater pollution; and have due regard to the needs of the public water supply	Consider inclusion of objectives to protect and, enhance water quality and the function of the water environment.
Environment Agency (2006): <i>Shoreline Management Plans for Beachy Head to Selsey</i>	To define, in general terms, the flooding and erosion risks to people and the developed, historic and natural environment in the SMP area over the next century To identify the preferred policies of managing those risks To identify the consequences of implementing the preferred policies To set out procedures for monitoring the	Indicators include: Coastal and fluvial flood frequency; Environment Agency annual indicative flood zone updates Environment Agency quarterly indicative flood plain mapping	Plan should include policies that are consistent with managing the risks of flooding and erosion to people and the developed, historic and natural environment in the Shoreline Management Plan area over the next	Consider inclusion of objectives to reduce the risk of flooding and the impact on society, the economy and the environment.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	effectiveness of the SMP policies To ensure that developers and planners take due account of the risks identified in the SMP and the preferred SMP policies		century Plan should include policies that take the risks of development in the SMP into account	
Environment Agency (2010): <i>Rivers Arun to Adur flood and erosion management strategy 2010-2020</i>	The River Arun to Adur Flood and Erosion Management Strategy sets out our plan to manage flood and erosion risks along this coastline. The final strategy was approved (April 2010) by the Environment Agency and Arun District, Worthing Borough and Adur District Councils. Through this management strategy, the partnership has identified ways to protect 9,800 properties that are at risk of flooding and erosion over the next 100 years. The plan is to sustain or improve all of the defences between the River Arun and the River Adur, except for a small section of the River Adur east bank where the potential to create some new intertidal habitat is being investigated.	The strategy sets out a work programme to be undertaken for stretches of coastline, subject to funding coming forward.	Plan should include policies that are as consistent, as far as practicably possible, with the sustainable management of coastal defences between the rivers Arun and Adur	Consider inclusion of objectives to reduce the risk of flooding and the impact on society, the economy and the environment.
Environment Agency (2009): <i>Pagham to East Head Coastal Defence Strategy</i>	Ensure a sustainable form of coastal defence which does not burden future generations with defences which are too costly to maintain.	The strategy includes recommended options and work cost estimates for different sections of seafront, which are subject to funding coming forward.	Policies within the plan should not contribute to flooding and should be consistent with the sustainable management of coastal defences at Pagham to East Head.	Consider inclusion of objectives to reduce the risk of flooding and its impact on society, the economy and the environment
Environment Agency (2009): Catchment Flood Management Plans for River Adur, Arun and Western Streams Catchment	To identify and develop policies for sustainable flood risk management Policies must take into account the likely impacts of climate change, the effects of land use and land management, as well as delivering multiple benefits and contributing to sustainable development. Plans set out our preferred plan for sustainable flood	Indicators include: Coastal and fluvial flood frequency; Environment Agency annual indicative flood zone updates Environment Agency quarterly indicative flood plain mapping	Plan should include policies consistent with sustainable flood risk management.	Consider inclusion of objectives to reduce the risk of flooding and the impact on society, the economy and the environment.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	risk management over the next 50 to 100 years.			
Environment Agency (2013): <i>Abstraction licensing strategies (CAMS process) Arun and Western Streams</i>	<p>The Water Framework Directive's (WFD) main objectives are to protect and enhance the water environment and ensure the sustainable use of water resources for economic and social development. CAMS contribute to achieving environmental objectives under the WFD by providing a water resource assessment of rivers, lakes, reservoirs, estuaries and groundwater (referred to as water bodies) and:</p> <ul style="list-style-type: none"> identifying water bodies that fail flow conditions expected to support good ecological status; preventing deterioration of water body status due to new abstractions; providing results which inform River Basin Management Plans (RBMPs). 	<p>The main components of this assessment that help us to understand the availability of water resources are:</p> <ul style="list-style-type: none"> a resource allocation for the environment defined as a proportion of natural flow, known as the Environmental Flow Indicator (EFI); the Fully Licensed (FL) scenario - the situation if all abstraction licences were being used to full capacity; the Recent Actual (RA) scenario – the amount of water which has actually been abstracted on average over the previous six years. 	Plan should be consistent with the vision to ensure sustainable management of water resources.	Consider inclusion of objectives to ensure sustainable management of water resources.
Environment Agency (2013): <i>Abstraction licensing strategies (CAMS process) Adur and Ouse</i>	The same objectives are set out as described above for the <i>Abstraction licensing strategies (CAMS process) Arun and Western Streams</i> .	The same components of assessment are used as described above.	Plan should be consistent with the vision to ensure sustainable management of water resources.	SA should consider objectives to ensure sustainable management of water resources.
Environment Agency (2013): <i>Abstraction licensing strategies (CAMS process) Mole</i>	The same objectives are set out as described above for the <i>Abstraction licensing strategies (CAMS process) Arun and Western Streams</i> .	The same components of assessment are used as described above.	Plan should be consistent with the vision to ensure sustainable management of water resources.	SA should consider objectives to ensure sustainable management of water resources.
Environment Agency (2012): <i>Lower Tidal River</i>	The overall Strategy objectives are:	The Strategy considered the following indicators in relation to	Plan should include policies consistent with sustainable	Consider inclusion of objectives to reduce the

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
<i>Arun Strategy</i>	<ul style="list-style-type: none"> To develop a strategic approach to sustainably manage flood risk to people, property and other assets over the next 100 years. To involve and consult with communities, organisations and interested parties to ensure that all views are considered as the strategy is developed. To raise awareness of the flood risk management works recommended with the strategy area and the external contributions required allowing these works to proceed. To secure continued compliance with International Environmental Legislation in relation to the Arun Valley Special Protection Area, Ramsar site and candidate Special Area of Conservation (Arun Valley SPA/Ramsar/cSAC). To comply with our statutory obligations under the Water Framework Directive (WFD) and national and local conservation designations relevant to the Strategy. 	<p>options to addressing flood risk management over 100 year timeframe:</p> <ul style="list-style-type: none"> Whether it will have an adverse or beneficial impact on the environment and whether it could provide opportunities to protect or improve the built or natural environment. How it would address the specific flood risk to people and property in the catchment, now and in the future. Whether it is technically feasible. What the economic costs are versus the benefit in terms of reducing damages to property and the risk to the population. 	flood risk management.	risk of flooding and the impact on society, the economy and the environment.
Environment Agency (yet to be published): <i>Aldingbourne Rife Integrated Flood Risk Management Plan and Works (ARIFRM)</i>	This will deliver a package of schemes and flood alleviation works to reduce flood risk to people and properties in the Aldingbourne Rife catchment. The Environment Agency will look at a holistic, catchment wide approach to flood risk management, as well as deliver environmental benefits and enhancements. Addressing flood risk in one area without addressing wider issues and looking at the interactions will not address	To be checked when ARIFRM is published.	Plan should include policies consistent with sustainable flood risk management.	Consider inclusion of objectives to reduce the risk of flooding and the impact on society, the economy and the environment.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	the problems fully and could pass it on elsewhere. Looking at the catchment holistically is also more likely to identify efficiencies and better ways of managing risk, without simply building expensive “hard” engineering solutions like walls, banks and pumps.			
Southern Water (2013): <i>Draft Water Resources Management Plan 2015-2040</i>	Ensuring there will be adequate water resources in the catchment area for the next 25 years.	None.	Plan should consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	The SA should contain objectives protecting water supply and water bodies from pollution.
Thames Water: <i>Draft Water Resources Management Plan 2015-2020</i>	Maintain drinking water quality at 99.95 per cent compliance with the relevant drinking water standards; Maintain security of water supply;	Reduce leakage by 10 per cent by 2020 (from the current target of 673 MI/d to 606 MI/d)	Plan should consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	The SA should contain objectives protecting water supply and water bodies from pollution.
Portsmouth Water (2014): <i>Final Water Resources Management Plan</i>	The Strategy set out the following objectives: <ul style="list-style-type: none"> • Adopting to and mitigating against climate change • Creating a better water environment • Sustainable planning and management of water resources • Ensuring that water and the water environment are valued 	The Final Water Resources Management Plan was prepared to meet the following levels of service: <ul style="list-style-type: none"> • Temporary Bans 1 in 20 years • Ordinary Drought Orders 1 in 80 years • Emergency Drought Orders 1 in 300 years 	Plan should consider the needs and requirements of all licensed water suppliers and statutory waste water undertakers.	The SA should contain objectives protecting water supply and water bodies from pollution.
Portsmouth Water (2013): <i>Final Drought Plan</i>	To ensure that Portsmouth Water does not breach its legal obligations to maintain a supply of water.	None.	Plan should consider the needs and requirements of all licensed water suppliers and statutory waste water	The SA should contain objectives protecting water supply and water bodies from

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
			undertakers.	pollution.
High Weald AONB Unit (2014): <i>High Weald AONB Management Plan 2014-2019</i>	The Management Plan contains a range of objectives related to the protection of: <ul style="list-style-type: none"> • Geology, landform, water systems and climate • Settlements • Route ways • Woodland • Fields and Heathland, and • Public understanding and Enjoyment of the Area's special qualities 	The Plan contains targets for each objective from 2014-2019.	Plan should include policies to protect and, where possible, enhance the character and environmental quality of the West Sussex landscape	Consider inclusion of objectives to protect and enhance biodiversity and landscape character
Chichester Harbour Conservancy (2014): <i>Chichester Harbour AONB Management Plan 2014-2019.</i>	To strike a balance between the needs of those who live, work and enjoy the harbour, with the integrity of the protected habitats and species which make up the rich and diverse land and seascape of Chichester Harbour AONB. To encourage sustainable and safe enjoyment of the harbour and AONB, through education and awareness-raising, to safeguard its special qualities for future generations. Protecting and improving the special qualities of the AONB. Sustainability and wise use of the AONB. Supporting the local community and economy. Working in partnership.	The management plan contains objectives meet and improve the standards of relevant European and national directives and regulations.	Plan should be consistent with conserving and enhancing the natural beauty of Chichester Harbour AONB Plan should be consistent, as far as possible, with supporting landscape and nature conservation designations of Chichester Harbour AONB.	Consider inclusion of objectives to protect and enhance biodiversity and landscape character
West Sussex County Council (2005): <i>A Strategy for the West Sussex Landscape</i>	Objective 1: ensure high quality new development which contributes to and reinforces landscape character Objective 2: conserve and enhance historic landscape character Objective 3: ensure the maintenance and renewal of the agricultural landscape Objective 4: conserve and enhance semi-natural	None	Plan should be consistent with supporting the objectives in the strategy.	SA should be consistent with supporting the objectives for protecting and enhancing the West Sussex landscape.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	habitats including securing the future of woodlands, hedgerows and trees as distinctive landscape features Objective 5: promote and celebrate the value and variety of the West Sussex landscape.			
East Sussex County Council (2013): <i>East Sussex Waste and Minerals Plan</i>	The Plan sets out that cooperation with neighbouring local authorities, including West Sussex, is necessary to overcome certain issues regarding minerals. Such as: <ul style="list-style-type: none"> • Soft sand reserves primarily occurring in the SDNP. • Regeneration of Shoreham Harbour and use of aggregate wharves in West Sussex. • Importation of chalk from West Sussex. 	Policies are monitored thorough the annual monitoring report	Any cross-boundary issues will need to be addressed during preparation of the MLP	Consider inclusion of objectives to encourage sustainable transport of minerals and protection of important landscapes.
Hampshire County Council (2013): <i>Hampshire Minerals and Waste Plan</i>	The Plan recognises the potential for cross-boundary impacts of minerals development although there is no reference to any specific issues with West Sussex.	Policies are monitored thorough the annual monitoring report	Any cross-boundary issues will need to be addressed during preparation of the MLP	Consider inclusion of objectives to encourage sustainable transport of minerals and reducing cumulative impacts of mineral development.
Surrey County Council (2011): <i>Surrey Minerals Plan</i>	The spatial strategy of the minerals plan identifies areas where there are potential cross boundary issues with West Sussex, in particular and issue which concerns an area of clay extraction in West Sussex that abuts the southern boundary of Surrey. Permitted reserves are declining in West Sussex and an area of search has been identified for a possible extension to this site into Surrey.	Policies are monitored thorough the annual monitoring report.	The cross-boundary issues will need to be addressed during preparation of the MLP	Consider inclusion of objectives to encourage sustainable transport of minerals and reducing cumulative impacts of mineral development.
Surrey County Council (2015): <i>Landscape Character Assessment</i>	The Surrey Landscape Character Assessment (LCA) is a comprehensive assessment of the landscape character of the county and describes	Policies are monitored thorough the annual monitoring report.	The cross-boundary issues will need to be addressed during preparation of the	Consider inclusion of objectives to reduce cumulative impacts of

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	the different variations of landscape in a county context.		MLP	mineral development.
South Downs National Park Water Cycle Study and SFRA Level 1 – Scoping and Outline Report (2015)	<p>The specific objectives are to:</p> <ul style="list-style-type: none"> Assess the capacity of current water infrastructure to accommodate required growth without adversely affecting the environment by considering: <ul style="list-style-type: none"> the environmental capacity of receiving watercourses to receive wastewater; and the potential of development to increase flood risk. Determine the potential impact of proposed development in the context of environmental legislation including the Water Framework Directive (WFD), Habitats Directive (HD), and any other relevant water or statutory planning policy. 	The assessment investigates flood risk issues and makes recommendations.	The Plan must take into account the SFRA's sequential testing and guidance for selecting suitable sites for minerals development.	Consider inclusion of objectives related to flood risk.
Kent County Council: <i>Minerals and Waste Local Plan 2013 – 2030</i>	<p>Planning for Minerals in Kent will:</p> <ul style="list-style-type: none"> Seek to deliver a sustainable, steady and adequate supply of land-won minerals including aggregates, silica sand, crushed rock, brickearth, chalk and clay, building stone and minerals for cement manufacture. Facilitate the processing and use of secondary and recycled aggregates and become less reliant on land-won construction aggregates. Safeguard economic mineral resources for future generations and all existing, planned and potential mineral transportation and processing infrastructure (including wharves 	Policies are monitored thorough the annual monitoring report.	The cross-boundary issues will need to be addressed during preparation of the MLP	Consider inclusion of objectives to encourage sustainable transport of minerals and reducing cumulative impacts of mineral development.

Strategy / Plan / Programme	Key objectives relevant to the Minerals Local Plan and SA	Key targets and indicators relevant to the Minerals Local Plan and SA	Implications for the Minerals Local Plan	Implications for SA
	<p>and rail depots and production facilities).</p> <ul style="list-style-type: none"> • Restore minerals sites to a high standard that will deliver sustainable benefits to Kent communities. 			

Appendix 3

Baseline Information

West Sussex Geographical Context

West Sussex covers an area of approximately 2,000 km² and includes Adur, Arun, Chichester, Horsham and Mid Sussex Districts and Crawley and Worthing Boroughs, plus a large part of the South Downs National Park (see **Figure 1** – note all figures are presented at the end of this appendix). There is a strongly defined settlement pattern of medium-sized and larger towns, villages and coastal settlements. Most development is on the coast and the eastern fringes leaving the centre almost wholly rural. Over half the County is covered by three areas nationally designated for their landscape quality and scenic beauty: High Weald and Chichester Harbour Areas of Outstanding Natural Beauty (AONB) and the South Downs National Park (SDNP), which all extend outside of the County boundary as well.³⁵

Minerals Baseline Data

West Sussex is underlain by four main types of minerals: sand and gravel, chalk, clay and sandstone. The County Council has commissioned a study by the British Geological Survey (BGS) looking at protecting these resources from sterilisation by other development to ensure that there are sufficient resources to meet current and future demand. The Study identifies potential safeguarding areas³⁶ and the delineation of Minerals Safeguarding Areas will be explored through the preparation of the MLP (see MLP Background Paper 6).

There are 37 active mineral sites (21 sites within West Sussex and 16 in the South Downs National Park)³⁷ where capacity is monitored, as well as 12 sites presently inactive, or in restoration and aftercare (the location of minerals and waste sites is shown in **Figure 1**). The supply of primary aggregates is augmented by marine-dredged and other materials imported through wharves and railheads³⁸ (see **Figure 1**).

The following baseline information in relation to minerals extraction in West Sussex has been taken from the most recent Annual Monitoring Report for the West Sussex MLP and Waste Local Plan (for the period 2013/14), the West Sussex Wharves and Railhead Study (February 2014)³⁹ and the West Sussex MLP Background Papers.

Aggregates

Sand and Gravel

Sand is won from the Sandgate Formation and the Folkestone Formation which is worked in a number of locations in West Sussex. The variable grain size and low clay content mean that little or no processing is required to produce high quality building sands for mortar (soft sand). These sites largely lie within the South Downs National Park.⁴⁰

Gravel of varying quality and some sharp sand is found to the south of the Downs in the south-west of the County. Coarser, silty gravels lie over the chalk to the north of a line approximating to the route of the A27 and have been exploited in dry workings. Overlying the clay to the south, cleaner, better-sorted gravels have been exploited through wet working as evidenced by lakes around the eastern and southern fringes of Chichester. Gravel sites are clustered around Chichester and south of the Downs from the Funtington area in the west to Slindon in the east.⁴¹

³⁵ West Sussex County Council (March 2013) West Sussex Waste Local Plan Sustainability Appraisal Report (Regulation 22).

³⁶ West Sussex County Council (2013) West Sussex Minerals Local Plan and Waste Local Plan: Annual Monitoring Report 2012/13.

³⁷ Joint West Sussex Minerals Local Plan Monitoring Report 2013/14

³⁸ West Sussex County Council (2013) West Sussex Minerals Local Plan and Waste Local Plan: Annual Monitoring Report 2012/13.

³⁹ LUC for West Sussex County Council (February 2014) West Sussex Wharves and Railhead Study.

⁴⁰ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 2: Minerals in West Sussex.

⁴¹ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 2: Minerals in West Sussex.

Currently, the supply of land-won aggregate in West Sussex comprises six sites (as shown in Table 6), all of which were operating before the designation of the South Downs National Park which now forms part of the plan area⁴². In 2014, the total permitted reserve of land won sand and gravel in West Sussex was 3.91 million tonnes (mt), down from 5.09 mt in 2012/13.

During 2014, 238,577⁴³ tonnes of primary land-won aggregate (sand and gravel) was extracted in West Sussex. This has decreased from 276,692 tonnes in 2013. Annual production figures for sand and gravel for West Sussex are shown in **Table 1** below.

The County Council is required to plan for a steady and adequate supply of aggregates and as part of this should maintain a 'landbank', which is to be used as an indicator of the security of aggregate minerals supply and to indicate the additional provision that needs to be made for new aggregate extraction and alternative supplies in mineral plans. Current Government Guidance in the NPPF states that there should be at least a seven year landbank of permitted reserves with valid planning permission for sand and gravel. The length of the landbank is calculated by dividing the total permitted reserve by the annual requirement.

The Joint West Sussex Minerals Local Aggregate Assessment (2016) outlines that West Sussex's total permitted reserve of land-won sand and gravel is 3,909,400 tonnes. The calculated maximum annual demand indicated that there is no requirement to plan for additional land won supplies over the Plan period for land won sharp sand and gravel. Whereas, for land won soft sand, if supplies are maintained at the level of the current 10 year average of sales then an additional 3.56-4.61mt would be needed over the Plan period.

Table 1: Annual production of land won sand and gravel in West Sussex 2005-2014⁴⁴

Year	Sales (tonnes)*
2005	703,000**
2006	573,000**
2007	495,000**
2008	408,000**
2009	287,000**
2010	301,000**
2011	284,000**
2012	284,000**
2013	276,692**
2014	238,577
3 Year Average	266,423
10 Year Average	385,027 (365,062 tonnes soft sand, 19,965 tonnes sharp sand and gravel)

⁴² Joint West Sussex Minerals Local Aggregate Assessment April 2016

⁴³ Joint West Sussex Minerals Local Aggregate Assessment April 2016

⁴⁴ Joint West Sussex Minerals Local Aggregate Assessment April 2016

* The figures for soft sand and sharp sand and gravel have been amalgamated due to reasons of confidentiality.

** Estimates based on operator returns, supplemented where necessary by estimates based on past rates and information from site visits.

Over the past decade there has been a marked increase in marine won sand and gravel, with a particular increase in the past five years. There has been a marked increase in the contribution of marine sand and gravel made to aggregate supply within West Sussex; from 78% in 2005 to 96% in 2014. Today in West Sussex, marine won sand and gravel is the majority source of sand and gravel.

Crushed Rock

There is a local demand for crushed rock, however, the majority is imported via aggregate wharves or railheads as there is a lack of primary sources within the Plan area. Imports are predominantly from Somerset (60-65%) to railheads in West Sussex.⁴⁵

Supply of Aggregates from South Downs National Park

The South Downs was designated as a National Park in 2010, in recognition of the importance of the landscape and scenic beauty. As noted above, the majority of high quality sand sources are within the South Downs National Park. Given the significance of the designation and the importance of conserving and enhancing the special qualities of the SDNP, the potential adverse impacts which can arise from aggregate extraction within the Park area is of particular concern. By virtue of its scale, character and nature, minerals development has the potential to have a serious adverse impact upon the natural beauty, wildlife, cultural heritage and recreational opportunities provided by the South Downs National Park. Minerals development is therefore considered as 'major development', requiring the demonstration of 'exceptional circumstances' (Paragraph 116 of the NPPF)⁴⁶.

Clay

Brick Clay is used in the manufacture of structural products such as bricks, pavers, clay tiles and clay pipes. Clay and shale can also be mixed with chalk in cement manufacture, used to line landfills, canals, lakes and as a source of lightweight aggregate. Although there are a number of clay types in West Sussex, the Weald Clay is the principal brick clay resource. The Wadhurst clay is also important for the manufacture of bricks and is used at two sites in West Sussex to produce a particular blend.

There are seven active clay extraction sites in West Sussex. Overall there is a permitted clay reserve of 14.3 million tonnes in 2013/14 (compared to 14.5 mt in 2012/13), which equates to 50 years of extraction at current rates. These produced a total of 0.25 mt in 2013/14 with an annual average of 0.47 mt over the past decade⁴⁷.

Sandstone

Sandstone is used as a building stone and crushed as aggregate. There are four types of sandstone which provide building stone important for restoration purposes in the County: the Hythe Formation, Horsham Stone, Ardingly Sandstone and Cuckfield Stone.

In terms of sandstone sites in the County, there are four active building stone extraction sites in West Sussex and one inactive site. There is only one active crushed rock sandstone extraction site in West Sussex.

⁴⁵ West Sussex County Council and South Downs National Park Authority (February 2014) Local Aggregate Assessment

⁴⁶ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 2: Minerals in West Sussex.

⁴⁷ Joint West Sussex Minerals Local Plan Monitoring Report 2013/14

Chalk

Chalk in West Sussex is extracted for agricultural lime production and, on rare occasions it is extracted for constructional fill. Furthermore, the chalk can be used as a restoration and conservation building material (for example in the crypt of Chichester Cathedral). The chalk resource acts as an important aquifer in the South East and provides the principle source of water supply in West Sussex, therefore is sensitive to potential water pollution.

There are two active chalk pits in West Sussex with a total reserve of approximately 12.03 mt. Sites that are not extracting chalk are either being used for aggregate recycling or will remain inactive until operators have further demand for chalk. Since the extraction of chalk for use in the cement making process ceased at Shoreham Cement Works in 1991, the annual production of the mineral has declined significantly. However, there remains a large permitted reserve of chalk at Shoreham Cement Works.

Recycled and Secondary Aggregates

Recycled and secondary aggregates have an important role to play in West Sussex as they can reduce the demand for extraction of primary aggregates such as those described above. Recycled aggregates are recycled construction materials, produced from crushing and screening inert demolition waste, road planing etc. Whereas secondary aggregates are materials used as a replacement for primary aggregates including mineral by-products such as waste sand from china clay, industrial wastes such as slag and railway ballast, and industrial by products such as spent foundry sand. The use of recycled and secondary aggregates helps to make use of inert waste from construction and demolition (e.g. rubble) and therefore move waste management up the waste hierarchy. WSCC and SDNPA are keen to promote the use of recycled and secondary aggregates. The existing policy in the adopted West Sussex Waste Local Plan (April 2014) supports the use of inert materials in this way and there are a number of sites in the Plan area that recycle aggregate, which have been safeguarded through the Waste Local Plan.

There are nine active sites within the Plan area that recycle inert material from construction and demolition (C&D) waste. The total capacity provided by these sites is estimated to be 608,723 tpa in 2014. At present, there is an estimated surplus in processing capacity at sites compared to the amounts of material being produced. The total capacity is also likely to be higher than provided by the nine sites due to the use of on-site mobile recycling facilities (for example when buildings are demolished as part of a new development).⁴⁸

Sales of recycled and secondary aggregates in West Sussex have increased by 56% between 2003 and 2012, peaking at 630,000 tonnes in 2010. This increase corresponds with a fall in primary aggregate sales which began to decline in 2003.⁴⁹

In addition, import of recycled and secondary aggregates from outside West Sussex may also help to reduce extraction of primary aggregates within the Plan area. However, there may be impacts associated with their transport, particularly if this were by road. It is difficult to obtain data on how much recycled and secondary aggregate is imported into West Sussex, there is currently no information contained in the West Sussex Local Aggregate Assessment.

Oil and Gas

Exploration for oil and gas in West Sussex took place during the 1980s and, at some sites, led to the award of appraisal licences. Borehole drilling then took place at 14 sites, including within areas now considered environmentally sensitive. However, only sites at Singleton (within the SDNP), Storrington, and Lidsey proved to be potentially productive at that time and they are still the only active production sites in the County.⁵⁰

There are currently three permitted exploration sites in West Sussex: Markwells Wood, Forestside (active – within the SDNP); Balcombe (inactive), and Broadford Bridge (inactive). However, a further planning consent would be required before production could take place.

⁴⁸ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 2: Minerals in West Sussex.

⁴⁹ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 2: Minerals in West Sussex.

⁵⁰ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 3: Onshore Hydrocarbons.

There is no requirement for West Sussex to provide a landbank of oil. This is due to the uncertainty of where oil may be located, which means that it is not feasible to allocate oil sites, or to safeguard potential areas of oil.

Transport of Minerals

Wharves and railheads play an important role in the supply of minerals to West Sussex. They also facilitate the sustainable transport of minerals compared to moving aggregates by road. There are currently six operational wharves in West Sussex, one in Littlehampton and five in Shoreham. There are also five operational railheads in West Sussex, one in Chichester, one in Ardingly and three in Crawley.⁵¹ Historical aggregate sales data set out in the West Sussex Wharves and Railheads Study showed that marine sand and gravel and crushed rock aggregates sales from wharves in West Sussex accounted on average for almost half (48%) of all aggregate sales between 2003-2012. Sand and gravel plus crushed rock aggregate sales from railheads contributed a quarter (26%) of the total sales, while land-won sand and gravel sales within the County accounted for the remaining quarter (25%).⁵² Therefore, imports of aggregate provide the majority of minerals supply in the County. The Wharves and Railheads Study noted that the balance between these four supply streams is at least partly a reflection of the economics involved: direct imports of marine aggregates into West Sussex wharves are likely to be more efficient than imports via rail from wharves in other MPAs, which would involve double-handling of the material; and direct imports of crushed rock by rail are likely to be more efficient than imports via coastal shipping, for similar reasons.

Other imports, by road, from neighbouring and more distant MPAs are not accounted for in the statistics presented in the Local Aggregate Assessment and Wharves and Railheads Study. This is also the case for exports by road (e.g. of marine-dredged and crushed rock landings within West Sussex wharves, as well as local exports from land-based sand & gravel pits). Such 'cross-border' transfers undoubtedly take place, although they are unable to be quantified at the present time. Exports by sea or by rail from West Sussex are not thought to be significant.⁵³

Despite this, within West Sussex, materials are mainly transported by road, and to a lesser extent rail. There are no rail-linked quarries in West Sussex and, given the high cost of infrastructure, this situation is unlikely to change and minerals extracted from quarries within West Sussex will continue to be transported by road.⁵⁴

The West Sussex Advisory Lorry Route (ALR) was defined in the West Sussex Transport Plan 2006-2016 (March, 2006). This has been developed to reduce the use of unsuitable roads by hauliers. The ALR is divided into the 'Strategic Lorry Routes', which are the preferential routes and the 'Local Lorry Routes' which should only be used for start or final leg of a journey or between built up areas in West Sussex (see **Figure 6**). The main elements of this are the coastal A27 and the A23/M23 route from Brighton to London via Crawley and the A24 from Worthing to Horsham. The A3 trunk route links with the A27 close to the western boundary of the County. Other strategic roads form additional links between settlements in the southern and eastern parts of the county. The Highways Agency is responsible for motorways and trunk roads which include the A27 and the A23 in West Sussex.⁵⁵

⁵¹ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 5: Safeguarding Minerals Infrastructure.

⁵² LUC for West Sussex County Council (February 2014) West Sussex Wharves & Railheads Study (Table 51.).

⁵³ LUC for West Sussex County Council (February 2014) West Sussex Wharves & Railheads Study (Para. 5.19.).

⁵⁴ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 5: Safeguarding Minerals Infrastructure.

⁵⁵ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

Environmental Baseline Data

Biodiversity and Geodiversity

A large part of West Sussex is formally designated as being of international, national, regional and local importance for nature conservation. Such designations include⁵⁶:

- Ramsar Sites (three in 2014).
- Special Protection Areas (SPAs) (four in 2014).
- Special Areas of Conservation (SACs) (eight in 2014).
- Sites of Special Scientific Interest (SSSIs) (over 78 in 2012).
- National and Local Nature Reserves (NNRs and LNRs) (two NNR and 26 LNR in 2014).
- Sites of Importance for Nature Conservation (SINCs) (293 in 2014).
- Ancient Woodland (accounts for 10.5% of the land area of the County).

Of the 78 SSSIs within West Sussex, 46.31% are in 'favourable' condition and 51.78% are in an 'unfavourable recovering' condition⁵⁷. The Nature and Environment and Rural Communities Act (2006) requires public bodies and statutory undertakers to ensure that due regard is had to conservation and biodiversity and that they actively pursue opportunities to achieve a net gain. The after-use of mineral extraction sites provides the opportunity to create new habitats and enhance biodiversity and geodiversity. International and national biodiversity designations in West Sussex are shown in **Figures 2 and 3** respectively.

In 2015, there were 68 Regionally Important Geological Sites (RIGS)⁵⁸ in West Sussex. These sites are now called Local Geological Sites (LGSs), and the Sussex Geodiversity Partnership identifies fourteen LGSs with public access in the County⁵⁹.

Landscape Character and Tranquillity

The geology of West Sussex relates closely to the five main nationally-defined natural character areas of the County. The County's Landscape Character Assessment identifies these five distinctive character areas – the South Coast Plain, the South Downs, the Wealden Greensand, the Low Weald, and the High Weald⁶⁰ (see **Figure 4**). The South Downs Integrated Landscape Character Assessment⁶¹ provides a further detailed breakdown of the assessment, particularly for the South Downs. Each of the five distinctive character areas has a unique configuration of geology and soils, biodiversity, appearance, settlement patterns, locally distinctive architecture, patterns of land use and economy, visible and perceived history, and degree of tranquillity which help distinguish one from another⁶². These areas contain a number of smaller character areas, which give the different parts of West Sussex their distinctive character and sense of place, and are a key component in considering minerals developments. There has been a decrease in the percentage of land that is classed as tranquil. In the 1960s, 69.94% of the County was considered tranquil and in 2007 it was 35%⁶³.

More than half the County has been designated for landscape conservation, including the South Downs National Park. In addition, High Weald AONB and Chichester Harbour AONB are both partly within West Sussex, and Surrey Hills AONB is adjacent to the northwest of the County. These designations are shown in **Figure 4**.

⁵⁶ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁵⁷ <http://www.sssi.naturalengland.org.uk/Special/sssi/index.cfm>

⁵⁸ West Sussex County Council and South Downs National Park Authority (2015) Draft Spatial Portrait, Vision and Objectives Paper.

⁵⁹ <http://www.geodiversitysussex.org.uk/geology/riggs.php> The LGS dataset has not yet been able to be mapped as WSCC still needs to obtain the data from the Sussex Geodiversity Partnership. It will be included in subsequent SA reports.

⁶⁰ West Sussex County Council (2005) A Strategy for the West Sussex Landscape

⁶¹ Available at: <http://www.southdowns.gov.uk/planning/integrated-landscape-character-assessment>

⁶² West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁶³ Developing an Intrusion Map of England (LUC, August 2007)

Minerals can only be worked where they occur and their extraction can potentially cause conflict through loss or changes to valued landscapes. The extraction of minerals and subsequent restoration of sites can impact on historic landscape patterns and lead to the creation of new landscapes. The South Downs National Park covers almost the whole of the chalk outcrop, almost half the Folkestone Beds, and part of the gravel resource north of Chichester. The High Weald AONB designation includes the entire Wadhurst Clay outcrop. The Chichester Harbour designation includes a partial amount of unconsolidated gravel.⁶⁴

The Chichester Harbour AONB, is an enclosed expanse of marine water, contains tidal mudflats, shingle, marsh, wetland scrub and small creeks providing a mosaic of precious inter-tidal habitats. It also includes the surrounding low-lying agricultural land, with some significant woodland. It is internationally important for wildlife. Despite heavy use for sailing and recreation generally, the area retains a secluded feel, strongly contrasting with a spacious quality in the broader reaches of the Harbour.⁶⁵

A large part of the High Weald AONB lies in West Sussex with the remainder in Kent and East Sussex. The sandstones and clays of the Wealden centre rise above the clay vales surrounding them. The headwaters ('ghylls') of rivers have cut deeply into the upland, producing a characteristic maze of intricate deep valleys and long ridge shanks. Extensive woodlands combine with the terrain and restricted views out to the surrounding plains and downland to create a secret and secluded character.⁶⁶

The towns and villages of West Sussex include the historic towns of national importance such as Chichester and Arundel, market towns of greatly varied character such as Billingshurst, Midhurst and Petworth, and larger places like Horsham and Haywards Heath which grew in the heyday of the railways.⁶⁷ Together with the coastal towns and seaside resorts, Crawley new town and a host of villages, these settlements contribute to the wider character of the five main natural character areas and of West Sussex as a whole.⁶⁸

West Sussex is one of the most heavily wooded counties in England, accounting for about 19% of the land area. Together with the extensive hedgerow network, woodland is a major element in the character of West Sussex as well as an economic, recreation, environmental and biodiversity resource.⁶⁹

Historic Environment

In West Sussex there are a large number of designations relating to the historic environment, including 235 Conservation Areas⁷⁰, 7,532 Listed Buildings (including 176 Grade I, and 300 Grade II* listed buildings), 34 Registered Park and Gardens, and 346 Scheduled Monuments.⁷¹ These designations are illustrated in **Figure 5**⁷².

Nearly half of the conservation areas and listed buildings are in Chichester District. The conservation areas range from the grand Victorian neighbourhoods of the seaside resorts and the historic cores of medieval towns to traditional market town and village centres.⁷³ The Listed Buildings within West Sussex are of architectural and historic interest covering every kind and age, reflecting the traditions and history of West Sussex.⁷⁴

West Sussex has an exceptionally rich archaeological heritage which contributes to its character. The County contains important areas and sites from all eras of human activity, notably Bronze

⁶⁴ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁶⁵ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁶⁶ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁶⁷ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁶⁸ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁶⁹ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁷⁰ https://www.westsussex.gov.uk/living/environment_and_planning/environment/conservation_areas.aspx

⁷¹ <http://list.english-heritage.org.uk/>

⁷² The conservation areas dataset is not included in Figure 3.5 as it has not yet been collected from the relevant bodies and is therefore not available for inclusion in the SA at this time. It will, however, be included in further stages of the SA.

⁷³ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁷⁴ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

and Iron Age forts and burial sites and a rich legacy of Roman remains and remains of the Wealden iron industry⁷⁵.

Climate Change

Transportation and flooding have a direct relationship with minerals development and climate change. Transporting minerals by road contributes to greenhouse gas emissions and climate change. However, mineral extraction sites can offer opportunities for water storage and help to reduce the impacts of flooding in some cases. The use of energy minerals in the UK, such as burning of coal, oil or gas, is also likely to result in impacts on the climate. National energy policy supports the use of energy minerals as part of the energy mix.⁷⁶

There were 134 extreme weather events in West Sussex between 1998 and 2008 and the South East region has experienced a degree of warming between 1959 and 2000. West Sussex is also expected to see an increase in the kind of flash flooding that was seen in 2011 and 2012, and a rise in sea level of around 21cm.⁷⁷ The summer of 2012 saw unprecedented weather conditions with severe flooding. West Sussex recorded some of the highest rainfall with 192% above average for April to September and 400% for June in the Bognor to Chichester area⁷⁸. The UK Climate Projections (UKCP09) predicts that by the 2050s the climate in the South East is set to get warmer, with wetter winters and drier summers than at present.⁷⁹ Specifically:

- Under Medium emissions⁸⁰, the increase in winter mean temperature is estimated to be 2.2°C; it is very unlikely to be less than 1.1°C and is very unlikely to be more than 3.4°C.
- Under Medium emissions, the increase in summer mean temperature is estimated to be 2.8°C; it is very unlikely to be less than 1.3°C and is very unlikely to be more than 4.6°C.
- Under Medium emissions, the change in annual mean precipitation is estimated to be 0%, with the change in winter mean precipitation estimated at +16% and the change in summer mean precipitation at -19%.

The 2011 estimates for the UK (DECC, 2012) were 22.9 million tonnes of greenhouse gas emissions from HGVs. Reducing the amount of greenhouse gases will be considered in assessing the MLP, for example, by using alternative modes of transport, as well as looking at ways to adapt to climate change.

Flooding and Water Resources

Flooding can occur from six sources in the county; Fluvial (river), tidal (the sea) and groundwater affect the largest areas. The other three sources derive from surface water, sewers and from artificial sources (e.g. canals and reservoirs)⁸¹.

The river system in West Sussex centres on the extensive catchments of the River Arun and the River Adur. These drain the entire Low Weald and much of the rest of the County. The River Ouse drains most of the High Weald in West Sussex, running to the sea via Lewes in East Sussex. The Mole and Eden have their headwaters in the High Weald. Where the Arun and Adur meander through the Downs as tidal rivers, they have created broad floodplains characterised by flat water meadows known as 'wild brooks'. The River Rother forms a western arm of the broad Arun catchment.⁸²

The risk of flooding is an important issue in West Sussex. The coastline of the County is generally low-lying and is naturally sinking and these areas are at risk from open flooding from high tides

⁷⁵ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁷⁶ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁷⁷ http://www.westsussex.gov.uk/living/sustainability/adapt_to_climate_change.aspx

⁷⁸ http://www.westsussex.gov.uk/living/environment_and_planning/flood_risk_management/flood_reports_and_strategies.aspx

⁷⁹ <http://ukclimateprojections.metoffice.gov.uk/22290>

⁸⁰ UKCIP uses three different emission scenarios labelled on their relative greenhouse gas emissions levels (Low, Medium and High) to develop projections for future climatic changes.

⁸¹ Strategic Flood Risk Assessment Update and Sequential Test of Mineral Sites (January 2016) West Sussex County Council and South Downs National Park Authority

⁸² West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

and storm surges in the English Channel. As a result, it is vulnerable to the predicted impacts of climate change. These include coastal, river (fluvial), groundwater and surface water flooding resulting from sea-level rise, increased storminess, increased winter rainfall, and higher and more intensive waves. Currently, approximately 12.6% of West Sussex is within a flood plain⁸³ and in 2009 there were 75 significant flood events resulting from 51 rainfall events. The latest government guidance suggests that climate change will increase river flows by 20% by 2109 and sea levels by 1m by 2109 (West Sussex Strategic Flood Risk Assessment 2010)⁸⁴. As noted above, mineral extraction sites can offer opportunities for flood alleviation through storage of excess flood waters.

The latest Strategic Flood Risk Assessment for the county⁸⁵ identifies two mineral sites where a large part of the site (over 30%) falls within an area at a risk of flooding from ground water sources. Brick Kiln Farm (Sharp Sand and Gravel Site) is identified to have 40% at high risk and 20% moderate risk of susceptibility and 50% of the site at Ham Farm (Soft Sand Site) has been classed as high susceptibility. All of the Sharp Sand and Gravel Sites have between 11-30% of their total area which is at risk of flooding from ground water sources and less than 10% risk of flooding from surface water sources.

The majority of Soft Sand Sites and Clay Sites are not affected from flooding from the six sources of flooding in West Sussex.

In addition to flood risk, considerations of hydrogeology can have a major bearing on the suitability of sites for mineral working. This is an important factor in developing the strategy for identifying areas suitable for new mineral development sites⁸⁶. Particularly as a large area of West Sussex is underlain by a principal aquifer and has a large number of Source Protection Zones, supplying both public and private water supplies. In some places the principal aquifer forms an important source of base flow to rivers, enabling them to continue flowing during dry periods⁸⁷. Therefore, the often complex relationship between the local geological structure at a specific site and the potential for water movement is likely to be a major issue for consideration of individual mineral working⁸⁸.

Water, Air, and Soil Quality

The EU Water Framework Directive (2000/60/EC) looks at the ecological health of both groundwater and surface water with the aim of achieving 'good ecological status' by 2027, and to ensure that there is no deterioration from existing statuses. In West Sussex there are 30 groundwater bodies and 33% are classified as good overall. With regard to surface water, within West Sussex, 19% are classified as having 'good' ecological status, 68% as 'moderate', 12% as poor and 1% as bad⁸⁹.

Air quality in West Sussex is generally good but faces threats from pollution caused by industrial processes and traffic. Poor air quality not only impacts on human health but also on environmental features. There are ten Air Quality Management Areas in West Sussex, all of which are designated due to exceedances of the Nitrogen Dioxide limit value (see **Figure 6**)⁹⁰.

The varied geology of West Sussex has generated wide variations in soil types and consequently in agricultural land productivity, although much high-grade agricultural land has effectively been produced by improvement through cultivation. Further maintaining high quality soil is vital to the

⁸³ The flood risk datasets for West Sussex have not yet been collected from the relevant body and are therefore not available for inclusion in the SA at this time. It will, however, be included in further stages of the SA.

⁸⁴ West Sussex County Council and South Downs National Park Authority (2013) West Sussex Waste Local Plan Sustainability Appraisal Report (Regulation 22)

⁸⁵ Strategic Flood Risk Assessment Update and Sequential Test of Mineral Sites (January 2016) West Sussex County Council and South Downs National Park Authority

⁸⁶ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁸⁷ Environment Agency (2009) Water Resources Strategy Regional Action Plan for Southern Region.

⁸⁸ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁸⁹ West Sussex County Council and South Downs National Park Authority (2013) West Sussex Waste Local Plan Sustainability Appraisal Report (Regulation 22). The relevant water datasets (e.g. SPZs, GVZs) have not been obtained from the Environment Agency by WSCC yet and are therefore not available for inclusion in the SA maps at this time. These datasets will be included in further stages of the SA once available.

⁹⁰ <http://uk-air.defra.gov.uk/aqma/>

health of the land and to agriculture. The agricultural land classification of West Sussex is illustrated in **Figure 7**.

Open Space and Recreation

In addition to affecting residents and other sensitive uses in close proximity to a site, minerals proposals may also affect the amenity of users of the countryside, in particular those using the Public Rights of Way (ProW) network. In 2012 there were 4,146km of ProW within the County⁹¹. **Figure 8** shows the ProWs in West Sussex along with village greens and common land. There are also numerous parks and gardens and open spaces in the County, although data for these is held by the District and Borough Councils so not able to be mapped for this Scoping Report, but can be seen on West Sussex's website⁹².

Economic and Social Baseline Data

Population and Employment

As of 2012, there were 815,100 people living in West Sussex⁹³, the population is forecast to rise to over 860,000 by 2026.⁹⁴ The population is largely concentrated within the twenty-four towns and villages that cover just 12% of the land area. Over 70% live in the 11 main towns and adjoining urban areas along the coast; the rural areas of the County are sparsely populated with about 10% of the population.⁹⁵

The main coastal development stretches from Bognor Regis in the west, through Littlehampton and Worthing to Shoreham-by-Sea, Southwick and Fishersgate in the east.⁹⁶ Chichester is further inland, in the south-west of the County. In the east, development is concentrated around Haywards Heath and Burgess Hill on the county boundary with East Sussex and in the north-east of the County around Horsham, Crawley, and East Grinstead.⁹⁷

The largest centres of population are Crawley and Worthing (around 100,000 each). Bognor Regis has a population of almost 65,000 people, and Horsham has about 50,000 people.⁹⁸ Burgess Hill, Chichester, East Grinstead, Haywards Heath, Lancing/Sompting, Littlehampton, and Shoreham/Southwick have populations of between 25,000 and 45,000 people. The small town of Midhurst (about 5,000 people) is a centre for the rural north-western part of the County.⁹⁹

In 2015, 82.6% of residents that were of working age were employed, with 4.3% of residents unemployed. Unemployment rates were lower than the average for the South East (4.4%) and Great Britain (5.7%)¹⁰⁰.

A 2011 study to inform the West Sussex Local Economic Assessment showed that employment in the mining and quarrying sector grew from 2001 to 2008 by 0.2%, but employment in the sector is projected to decrease from 2008 to 2026 by 0.1%.¹⁰¹ However, the mining and quarry sector is forecast to only contribute to 0.1% of overall employment in West Sussex (the majority is within three main sectors of hotels and distribution, financial, business and other market services and non-market services). The small contribution of the minerals industry to overall employment levels in West Sussex is in line with the national figure.¹⁰² According to a study into the

⁹¹ West Sussex County Council and South Downs National Park Authority (2013) West Sussex Waste Local Plan Sustainability Appraisal Report (Regulation 22)

⁹² http://www.westsussex.gov.uk/leisure/enjoy_west_sussex/parks_sports_pitches_and_gard.aspx

⁹³ <http://www.nomisweb.co.uk/reports/lmp/la/1941962888/report.aspx>

⁹⁴ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁹⁵ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁹⁶ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁹⁷ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁹⁸ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

⁹⁹ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

¹⁰⁰ <https://www.nomisweb.co.uk/reports/lmp/la/1941962888/printable.aspx>

¹⁰¹ SQW (2011) Demography & Economy of West Sussex – profile and projections: Input to West Sussex Local Economic Assessment

¹⁰² SQW (2011) Demography & Economy of West Sussex – profile and projections: Input to West Sussex Local Economic Assessment

economic impact of the recession on the coastal regions of West Sussex¹⁰³, the concentration of employment within the mining and quarrying sector was 9 times higher in Adur District than in the South East region as a whole, which shows that this area has a strong mining sector.

Health

The West Sussex Public Health Plan (2012-2017)¹⁰⁴ provides an overview of the health and wellbeing of residents in West Sussex, as detailed below.

West Sussex is generally an affluent County with longer than average life expectancy and a good quality of life for residents. Indicators such as mortality rates and infant health continue to improve in all parts of the County. There are some communities in West Sussex that are relatively deprived, mainly in the towns along the coastal strip and in Crawley. Deprivation has a strong direct association with poorer health as well as other aspects of life that influence wellbeing, such as employment.

Overall, West Sussex has an older age structure than England, with 20.8% of the population aged 65 years or over compared with 16.5% in England. It is expected that this proportion will increase over the next decade as the 'baby boomer' generation (i.e. people born between 1945 and the mid-1960s) gets older. The percentage of younger working age adults is much smaller than England. This means that the ratio of dependents (children and older people) to those of working age is high in West Sussex, and likely to increase. As with the overall population, people aged 65+ years in West Sussex are relatively healthy, but as they age they are more likely to have a long term condition or disability, and may need support to maintain their independence and quality of life.

Tourism

Tourism is an important part of the local economy¹⁰⁵. Much of the attraction of West Sussex derives from the character and quality of the landscape; particularly due to the two AONBs and the South Downs National Park. It is important, therefore, that in considering the impact of minerals development, the attractiveness to visitors of the County is conserved and enhanced.

¹⁰³ South East England Development Agency (2010) Coastal West Sussex: economic impact of the recession and sectorial strengths for the upturn

¹⁰⁴ West Sussex County Council. West Sussex Public Health Plan 2012-2017.

¹⁰⁵ West Sussex County Council and South Downs National Park Authority (2013) West Sussex Waste Local Plan Sustainability Appraisal Report (Regulation 22)

Appendix 4

Reasonable alternative policy options considered during preparation of the JMLP and SA assumptions used in appraisal of site options

Table A4.1: Reasonable alternative policy approaches during preparation of the JMLP, and how these were taken forward or discounted in the Draft JMLP (April 2016) including the WSCC and SDNPA reasons for this

[Note that WSCC and SDNPA prepared a Background Document published alongside the Draft Regulation 18 Joint MLP that sets out how options were identified and appraised.]

Topic	Alternatives considered during preparation of Draft MLP in 2015	Draft JMLP (April 2016) <i>[Yellow highlighting shows the changes made to the Vision and Strategic Objectives]</i>	Plan-makers' justification for selecting/rejecting options or changes to draft policies now included in Draft JMLP (April 2016)
Vision			
Overarching	<p>By 2033 West Sussex:</p> <p>Will be a place where minerals are produced in ways which conserve and enhance the beautiful outdoors of West Sussex, in particular the special qualities of the South Downs National Park, for the benefit or current and future generations.</p> <p>Will be a place where the production and transportation of minerals does not detract from it having thriving communities and being a special place to live and visit. In particular the transport of minerals by road will have reduced.</p> <p>Will have contributed to the supply of minerals, in particular aggregates, clay, chalk, building stone and oil and gas, to support growth in West Sussex. In particular social and economic progress of both the Coastal West Sussex and Gatwick Diamond strategic growth areas will have been supported through the provision of aggregate to enable the delivery of new housing and other development.</p> <p>Will be a place which seeks to meet its own needs for minerals while gradually sourcing more and more minerals from alternatives to land-won resources and</p>	<p>By 2033, West Sussex:</p> <p>Will be a place where minerals are produced in ways which conserve and enhance the beautiful outdoors of West Sussex, in particular the special qualities of the South Downs National Park, for the benefit or current and future generations.</p> <p>Will be a place where the production and transportation of minerals does not detract from it having thriving communities and being a special place to live and visit. In particular impact associated with the transport of minerals by road will have been minimised.</p> <p>Will have contributed to the supply of minerals, in particular aggregates, clay, chalk, building stone and oil and gas, to support growth in West Sussex. In particular social and economic progress of both the Coastal West Sussex and Gatwick Diamond strategic growth areas will have been supported through the provision of aggregate to enable the delivery of new development.</p> <p>Will be a place which seeks to meet its own needs for minerals while aspiring to source more and more</p>	Minor changes in the text of the vision to improve clarity and emphasis.

	<p>from areas outside the South Downs National Park.</p> <p>Will have made a contribution to the needs of other areas in a manner which is consistent with this Vision, in particular by ensuring the supply of minerals via ports at Shoreham and Littlehampton and railheads at Chichester, Crawley and Ardingly.</p> <p>Will have ensured minerals have been produced in a manner that contributes to a low carbon, circular economy.</p> <p>Will have safeguarded valuable mineral resources, including the soft and silica sand of the Folkestone Beds, the sharp sand and gravel around Chichester, clay needed for individual brickworks, and building stone from needless sterilisation by other development.</p> <p>Be a place where the use of locally produced bricks and locally sourced stone, particularly Horsham Stone, Hythe Sandstone, Ardingly Sandstone and flint, has enhanced local distinctiveness and the rich archaeological heritage will have been protected.</p> <p>Be a place where mineral sites are restored to the highest standards, leading to larger, better managed and connected areas of habitat including lowland heath, woodland and wetland habitats and conserved and enhanced populations of priority species, as well as increased opportunities for recreation and tourism and for sites within the South Downs National Park, recognising the purposes of the SDNP.</p>	<p>minerals from alternatives to extraction of indigenous resources, and from areas outside the South Downs National Park and Areas of Outstanding Natural Beauty.</p> <p>Will have made a contribution to the needs of other areas in a manner which is consistent with this Vision, in particular by ensuring the supply of minerals via ports at Shoreham and Littlehampton and railheads at Chichester, Crawley and Ardingly.</p> <p>Will have ensured minerals have been produced in a manner that protects and enhances the historic and natural environment, and contributes to a low carbon, circular economy.</p> <p>Will have safeguarded valuable mineral resources, including the soft and silica sand of the Folkestone Beds, the sharp sand and gravel around Chichester, clay needed for individual brickworks, and building stone from needless sterilisation by other development.</p> <p>Be a place where the use of locally produced bricks and locally sourced stone, particularly Horsham Stone, Hythe Sandstone, Ardingly Sandstone and flint, has enhanced local distinctiveness and the rich archaeological heritage will have been protected.</p> <p>Be a place where mineral sites are restored to the highest standards, leading to larger, better managed and connected green infrastructure and areas of habitat including lowland heath, woodland and wetland habitats and conserved and enhanced populations of priority species. Restored sites will increase opportunities for recreation and responsible tourism and for habitat creation within the South Downs National Park, recognising the purposes of the SDNP.</p>	
Strategic Objectives			
Overarching	1. To promote the prudent and efficient production and use of minerals, having regard to the market	1. To promote the prudent and efficient production and use of minerals, having regard to the market	Two new objectives have been included in the Draft

	<p>demand and constraints on supply in the Plan area.</p> <ol style="list-style-type: none"> 2. To maximise and prioritise the supply and use of secondary and recycled aggregates before supply and use of primary sources. In particular to reduce reliance on land-won aggregates. 3. To make provision for soft sand to meet the needs of West Sussex from outside the South Downs National Park, where possible; and only make provision for a declining amount of extraction within the SDNP over the plan period. 4. To protect and maintain the existing mineral development sites and infrastructure including capacity for importation of minerals via the ports of Littlehampton and Shoreham and the railheads at Chichester, Crawley and Ardingly. 5. To safeguard potential economically viable mineral resources from sterilisation. 6. To protect, and where possible, enhance the health and amenity of residents, businesses and visitors. 7. To conserve and enhance the landscape and townscape character of West Sussex and the special qualities and local distinctiveness of the South Downs National Park, High Weald AONB and Chichester Harbour AONB and their settings. 8. To protect and, where possible enhance the natural and historic environment and resources of West Sussex. 9. To minimise the risk to people and property from flooding, safeguard groundwater aquifers from 	<p>demand and constraints on supply in the Plan area.</p> <ol style="list-style-type: none"> 2. To maximise and prioritise the supply and use of secondary and recycled aggregates before supply and use of primary sources. In particular to reduce reliance on land-won aggregates. 3. To make provision for soft sand to meet the needs of West Sussex from outside the South Downs National Park, where possible; and only make provision for a declining amount of extraction within the SDNP over the plan period. 4. To protect the South Downs National Park by only providing for silica sand from within it in exceptional circumstances and when in the public interest. 5. To protect and maintain the existing mineral development sites and infrastructure including capacity for importation of minerals via the ports of Littlehampton and Shoreham and the railheads at Chichester, Crawley and Ardingly. 6. To safeguard potential economically viable mineral resources from sterilisation. 7. To protect, and where possible, enhance the health and amenity of residents, businesses and visitors. 8. To conserve and enhance the landscape and townscape character of West Sussex and the special qualities and local distinctiveness of the South Downs National Park, High Weald AONB and Chichester Harbour AONB and their settings. 9. To protect and, where possible, enhance the 	<p>JMLP.</p> <p>New objective 4 (re: silica sand) was added specifically in light of a study that confirmed the widespread presence of silica sand within the Folkestone Formation which is prevalent within the boundary of the SDNP. The objective reflects national policy.</p> <p>In light of the particular interest shown by communities in West Sussex, in oil and gas development new objective 12 was added.</p>
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	<p>contamination, and ensure the water environment is conserved and enhanced.</p> <p>10. To maximise the use of rail and water transport for the movement of minerals and to minimise lorry movements and the use of local roads for minerals.</p> <p>11. To ensure high quality mitigation and restoration to appropriate after uses.</p> <p>12. To minimise carbon emissions and to adapt to, and to mitigate the potential adverse impacts of, climate change.</p>	<p>natural and historic environment and resources of West Sussex.</p> <p>10. To minimise the risk to people and property from flooding, safeguard water resources, including aquifers, from contamination, and ensure the quality and quantity of the water environment is conserved and enhanced.</p> <p>11. To maximise the use of rail and water transport for the movement of minerals and to minimise lorry movements and the use of local roads for minerals.</p> <p>12. To protect the environment and local communities in West Sussex from unacceptable impacts of any proposal for oil and gas development, whilst recognising the national commitment to maintain and enhance energy security in the UK.</p> <p>13. To ensure high quality mitigation and restoration to appropriate after uses.</p> <p>14. To minimise carbon emissions and to adapt to, and to mitigate the potential adverse impacts of, climate change.</p>	
Strategic Minerals Supply – Policy Options/ Draft Policies			
Sharp sand and gravel	<p>Two reasonable alternative options were considered for sharp sand and gravel:</p> <p>Option SSG1 – Maintain supplies from existing permitted reserves of sharp sand and gravel.</p> <p>Option SSG2 – Allow windfall sites to come forward in certain circumstances.</p>	<p>Policy M1: Sharp sand and gravel</p> <p>Proposals for land won sharp sand and gravel extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <p>a) the proposal is needed to ensure that a landbank equivalent to at least seven years supply is maintained;</p>	Policy M1 takes both options SSG1 and SSG2 forward and provides more detail.

		<p>b) the proposal is located outside the AONB¹⁰⁶/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas;</p> <p>c) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	
Soft Sand	<p>One option was considered reasonable for soft sand:</p> <p>Option SS2:</p> <ul style="list-style-type: none"> • Safeguard existing permitted reserves • Do not allocate additional sites or extensions to existing sites within the SDNP. • Identify additional allocations and/or areas of search in West Sussex but beyond the South Downs National Park. • Allow for imports to meet requirements which cannot be met from indigenous supplies. 	<p>Policy M2: Soft Sand</p> <p>Proposals for land won soft sand extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (a) it can be demonstrated that extraction cannot take place on the site allocated within Policy M11 of this plan; (b) the proposal contributes to the maintenance of at least a seven year landbank; (c) the proposal is located outside the South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas; (d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network. 	<p>Policy M2 along with Policy M11 takes forward option SS2 in more detail.</p> <p>The fourth point of Option SS2 is now addressed in the supporting text for Policy M2.</p> <p>The reason why no alternative soft sand options were considered is explained in the Background Document to the Draft Reg. 18 JMLP. It explains that the development of new sites in the SDNP or extensions to existing sites in the SDNP would not pass the exceptional circumstances test (as mentioned in Policy M2 (a) (iii)). This is largely due to the fact that Duty to Cooperate engagement with other authorities has shown</p>

¹⁰⁶ AONBs include Chichester Harbour.

			it would be possible to meet demand for soft sand from reserves beyond the SDNP including those beyond West Sussex.
Silica Sand	<p>One option was considered reasonable for silica sand:</p> <p>Option SiS1 - Criteria-based policy to assess unallocated silica sand sites that are proposed for development during the plan period.</p>	<p>Policy M3: Silica Sand</p> <p>Proposals for silica sand extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (a) There is a demonstrable need for silica sand of a specific quality and quantity that will be met by the proposal; (b) the proposal will contribute to maintaining a stock of permitted reserves of at least 10 years for individual sites and 15 years for sites where significant new capital is required, to support the level of actual and proposed investment required for new or existing plant and the maintenance and improvement of existing plant and equipment; (c) the proposal is located outside the South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas; (d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network. 	Policy M3 takes Option SiS1 forward in more detail.
Chalk	<p>Two reasonable alternative options were considered for chalk:</p> <ul style="list-style-type: none"> • Option CH1 – Criteria-based policy (small scale sites). • Option CH2 – Criteria-based policy (extensions only). 	<p>Policy M4: Chalk</p> <p>Proposals will be permitted for small scale chalk extraction, including extensions of time and physical extensions to existing sites, provided that:</p>	Policy M4 has taken forward both options CH1 and CH2 in more detail.

	<p>Option CH3 – ‘Criteria-based policy (Any size site)’, was not considered a reasonable alternative as the extent of the permitted reserves, the low level of demand for chalk and the location of the majority of the chalk resource within the South Downs National Park means that there is no justification to permit anything other than small scale sites.</p>	<ul style="list-style-type: none"> (a) There is a demonstrable need for the material for local use, such as an agricultural lime, building stone for repair of historic buildings or another local use; (b) the chalk cannot be reasonably sourced from existing permitted quarries; (c) they are located outside the AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas; (d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network. 	
Clay	<p>Two reasonable alternative options were considered for clay:</p> <p>Option CL1 – Allocate a specific site (Land Adjacent to West Hoathly Brickworks) and include a criteria-based policy that allows extensions to existing sites only): This option involves the allocation of Land Adjacent to West Hoathly Brickworks for clay extraction. It also involves inclusion of a criteria-based policy against which proposals for unallocated ‘windfall’ clay sites will be assessed. Sites should be extensions to existing sites only and well-located to the ALR. Preference would be given to sites outside the AONB and National Park unless no suitable alternatives are available.</p> <p>Option CL2 – Criteria-based policy (extensions to existing sites and ‘satellite’ sites only): Include a criteria-based policy against which unallocated clay sites will be assessed. Sites should be located as close as practicable to the existing brickworks to</p>	<p>Policy M5: Clay</p> <ul style="list-style-type: none"> (a) Proposals will be permitted for the extraction of clay provided that: <ul style="list-style-type: none"> (i) they would maintain a landbank of at least 25 years of permitted clay reserves for individual brickworks; or (ii) the type of clay required is not available at currently permitted sites and is needed to provide an appropriate blend for the manufacture of bricks. (b) Proposals for the small scale extraction of clay, for uses other than brick making, will be permitted provided that: <ul style="list-style-type: none"> (i) there is a need for the clay for engineering purposes; 	<p>Policy M5 and M11 (which allocates West Hoathly Brickworks) take both options CL1 and CL2 forward in more detail.</p>

	<p>where the clay will be supplied and well-located to the ALR. Preference would be given to sites outside the AONB and National Park unless no suitable alternatives are available.</p>	<p>(ii) the clay cannot be used for brick-making; or</p> <p>(iii) the resource is within an existing sand and gravel quarry and the extraction of clay would be ancillary to the extraction of sand and gravel.</p> <p>(c) Proposals that accord with Part (a) or (b) will be permitted provided that:</p> <p>(i) They are located outside the AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13 , to locate within those areas;</p> <p>(ii) they are extensions of time and/or physical extensions to existing clay pits or, where this is not possible, they should be sited as close as possible to the site where the clay will be used;</p> <p>(iii) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	
Building Stone	<p>One option was considered reasonable for building stone:</p> <p>Option ST1 - Criteria-based policy (specific sites and extensions to existing sites only).</p>	<p>Policy M6: Stone</p> <p>Proposals will be permitted for small scale¹⁰⁷ extraction of building stone, including extensions of time and physical extensions to existing sites, provided that:</p> <p>a) They are needed to provide suitable local building stone necessary for restoration work associated with the maintenance of historic buildings and structures and new build projects;</p>	<p>Policy M6 has taken option ST1 forward in more detail.</p>

¹⁰⁷ A small-scale building stone extraction site is one that produces predominantly building stone for conservation and restoration of old buildings or for new build purposes in areas where the stone provides historically authentic materials in keeping with the local built environment. Operations are likely to be intermittent and volumes produced are low.

		<p>b) the stone cannot be reasonably sourced from existing permitted quarries:</p> <p>they are located outside the AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M14, to locate within those areas;</p> <p>d) There transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	
Oil & Gas (Hydrocarbons)	<p>Two reasonable alternative options were considered for oil and gas:</p> <ul style="list-style-type: none"> • Option OG1 - Identify areas of search, aligned with PEDL areas, for location of headworks associated with extraction of oil and gas. <p>Plus a criteria based policy or policies for conventional and unconventional oil and gas development which comes forward within the relevant area of search.</p> <ul style="list-style-type: none"> • Option OG2 - Identify two areas of search for location of headworks associated with extraction of oil and gas: <ul style="list-style-type: none"> - one for conventional oil and gas which is aligned with PEDL areas, - one for unconventional oil and gas which is aligned with the PEDL areas but excludes 'protected areas' (as defined in the draft 'Onshore Hydraulic Fracturing (Protected Areas) Regulations 2015) <p>Plus a criteria based policy or policies for conventional and unconventional oil and gas development which comes forward within the</p>	<p>Policy M7a: Hydrocarbon development not involving hydraulic fracturing</p> <p><i>Exploration and Appraisal</i></p> <p>(a) Proposals for exploration and appraisal for oil and gas, not involving hydraulic fracturing, including extensions* to existing sites will be permitted provided that:</p> <ul style="list-style-type: none"> (i) the site is located outside the South Downs National Park, High Weald AONB or Chichester Harbour AONB unless it has been demonstrated that there are exceptional circumstances and that it is in the public interest in accordance with Policy M13; (ii) the site selected is the least sensitive, deliverable location from which the target reservoir can be accessed, taking into account impacts from on-site activities and off-site activities including HGV movements; (iii) any adverse impacts including (but not limited to) noise, dust, visual intrusion, transport, and lighting, on both the 	<p>Policy M7a takes forward in more detail the criteria based policy suggested in options OG1 and OG2 in relation to development not involving hydraulic fracturing (i.e. conventional oil and gas development).</p> <p>Policy M7b takes forward the criteria based policy approach suggested in options OG1 and OG2 but in relation to development involving hydraulic fracturing (i.e. unconventional oil and gas development).</p> <p>However, identifying areas of search has not been carried forward for either type of hydrocarbon development, because it is considered that the identification of specific Areas of Search is</p>

	relevant area of search.	<p>environment and local community, including air quality and the water environment, can be minimised, and/or mitigated, to an acceptable level;</p> <p>(iv) restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or not oil or gas is found.</p> <p><i>Production</i></p> <p>(b) Proposals for oil and gas production, not involving hydraulic fracturing, including extensions* to existing sites, will be permitted provided that:</p> <p>(i) they accord with (a)(i-iv) above;</p> <p>(ii) no significant adverse impacts would arise from the transport of oil/gas and water from the site;</p> <p>(iii) the restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M25; and</p> <p><i>Activity beneath or proximate to designated areas</i></p> <p>(c) Proposals for exploration, appraisal and production of oil and gas, not involving hydraulic fracturing, will be permitted underneath or in close proximity to the South Downs National Park, AONBs, Source Protection Zone 1 and Sites of Special Scientific Interest which demonstrate that special care will be taken to avoid harming the setting and/or special qualities and/or value of these designated areas.</p> <p>* including physical extensions or extensions to operations within the existing site boundary. N.B. The suitability of proposals for alterations to permitted operations will be considered against the</p>	<p>superfluous as, in any case, the areas that would be identified would be those within which, the policy, as written, taken together with the licensing regime, would allow development to take place. PEDL areas and specific protected areas (identified within the policy) would be shown on the key diagram.</p>
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		<p>Development Management policies.</p> <p>Policy M7b: Hydrocarbon development involving hydraulic fracturing</p> <p><i>Exploration and Appraisal</i></p> <ul style="list-style-type: none"> (a) Proposals for exploration and appraisal for oil and gas, involving hydraulic fracturing, including extensions* to existing sites will be permitted provided that: <ul style="list-style-type: none"> (i) any surface development is located outside the following areas (as shown on the policies map): <ul style="list-style-type: none"> i. South Downs National Park ii. Chichester Harbour AONB iii. High Weald AONB iv. Source protection zone 1; v. Sites of Special Scientific Interest (SSSI) (ii) the site selected is shown to be the least sensitive, deliverable location from which the target reservoir can be accessed, taking into account impacts from on-site activities and off-site activities including HGV movements; (iii) any adverse impacts including (but not limited to) noise, dust, visual intrusion, transport, and lighting, on both the environment and local community, including air quality and the water environment, can be minimised, and/or mitigated, to an acceptable level; (iv) restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or 	
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		<p>not oil or gas is found.</p> <p><i>Production</i></p> <p>(b) Proposals for oil and gas production, involving hydraulic fracturing, including extensions* to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (i) they accord with (a)(i-iv) above; (ii) no significant adverse impacts would arise from the transport of oil/gas and water from the site; (iii) the restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or not oil or gas is found; and <p><i>Activity beneath or proximate to designated areas</i></p> <p>(c) Proposals for exploration, appraisal and production of oil and gas, involving hydraulic fracturing, will be permitted underneath or in close proximity to the South Downs National Park, AONBs, Source Protection Zone 1 and Sites of Special Scientific Interest which demonstrate that special care will be taken to avoid harming the setting and/or special qualities and/or value of these designated areas.</p> <p>* including physical extensions or extensions to operations within the existing site boundary. N.B. The suitability of proposals for alterations to permitted operations will be considered against the Development Management policies.</p>	
Plant, processing and	<i>Note that this draft policy was originally included</i>	Policy M8: Plant, processing and secondary	This policy has moved from

secondary activities	<p><i>within the Development Management policies as shown further below in this table. However, it was moved into the Strategic policies section in the final version of the Draft JMLP.</i></p> <p>Plant, processing and secondary activities</p> <p>Proposals for secondary mineral processing and /or ancillary activities such as concrete batching and blending will be expected to be the subject of separate applications and may be permitted provided that:</p> <p>(a.) it can be demonstrated that the proposed operations:</p> <ul style="list-style-type: none"> • have a significant link to the existing operations on site; • will not become the main development at the site. <p>(b.) the overall restoration scheme and progressive restoration of the site is not unduly delayed or prolonged or in some other way jeopardised;</p> <p>(c.) the duration of operations is tied to that of the primary operation;</p> <p>(d.) The proposal is consistent with other policies of the development plan</p>	<p>activities</p> <p>Proposals for secondary mineral processing and /or ancillary activities such as concrete batching and blending will be permitted provided that:</p> <p>(a) the proposed operations:</p> <ul style="list-style-type: none"> (i) are linked to the existing operations on site; (ii) will remain ancillary to the principle development at the site; (iii) are of a duration that is tied to that of any primary extraction operation. <p>(b) the overall restoration scheme and progressive restoration of the site is not unduly delayed or prolonged or in some other way jeopardised;</p>	the Development Management policies section and is largely the same as the previous proposed policy.
Mineral Resource Safeguarding	<p>Minerals Safeguarding Policy Intention.</p> <p>Individual options for delineating MSAs and MCAs for different mineral types were also considered:</p> <p>Sand and Gravel:</p> <ul style="list-style-type: none"> • Option MSA/A1: MSA to include the whole of the unconsolidated sand and gravel mineral resources, including a 250m buffer. Define an MCA around the same area. • Option MSA/A2: MSA to include the whole of the unconsolidated sand and gravel mineral resources, including a 250m buffer excluding 	<p>Policy M9: Safeguarding Minerals</p> <p>(a) Existing minerals extraction sites will be safeguarded against non-mineral development that prejudices their ability to supply minerals in the manner associated with the permitted activities.</p> <p>(b) Sand and gravel, brick-making clay and building stone resources and chalk reserves are safeguarded against sterilisation. Proposals for non-mineral development within</p>	<p>Policy M9 takes forward the mineral safeguarding policy intention.</p> <p>The JMLP includes maps delineating the MSAs and MCAs for:</p> <p>Sand and Gravel (including sharp sand and gravel, soft sand and silica sand)</p>

	<p>urban areas. Define an MCA around the same area.</p> <p>Clay:</p> <ul style="list-style-type: none"> • Option MSA/B1: MSA to include the whole of the Weald and Wadhurst clay formations, including a 250m buffer. Define an MCA around the same area and around any brickworks that fall outside of these areas to safeguard them from proximal development (site area plus a 250m buffer). • Option MSA/B2: MSA to include the whole of the Weald and Wadhurst clay formations, including a 250m buffer, excluding urban areas. Define an MCA around the same area and around and brickworks that fall outside of these areas to safeguard them from proximal development (site area plus a 250m buffer). <p>Chalk:</p> <ul style="list-style-type: none"> • Option MSA/C1: MSA to include the whole of the chalk outcrops, including a 250m buffer. Define an MCA around the same area to safeguard them from proximal development (plus a 250m buffer). • Option MSA/C2: MSA to include the whole of the chalk outcrops, including a 250m buffer excluding urban areas. Define an MCA around the same area to safeguard them from proximal development (plus a 250m buffer). • Option MSA/C3: Do not safeguard the whole chalk resource. Define an MCA around existing active chalk quarries any dormant/inactive quarries (if the evidence shows that there is a need to do so) to safeguard them from proximal development (site area plus 250m buffer). <p>Consolidated Bedrock (Building Stone):</p> <ul style="list-style-type: none"> • Option MSA/D1 	<p>the Minerals Safeguarded Areas will be permitted provided that:</p> <ul style="list-style-type: none"> (i) Mineral sterilisation will not occur; or (ii) it is appropriate and practicable to extract the mineral prior to the development taking place, having regards to the other policies in this Plan; or (iii) the overriding need for the development outweigh the safeguarding of the mineral. 	<p>Chalk</p> <p>Clay</p> <p>Building Stone</p>
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	<ul style="list-style-type: none"> Option MSA/D2 Option MSA/D3 		
Minerals Infrastructure Safeguarding	<p>Individual options for safeguarding different types of minerals infrastructure were considered:</p> <p>Oil and Gas</p> <ul style="list-style-type: none"> Option SMI/E1: Safeguard existing onshore hydrocarbon production facilities to safeguard them from proximal development (site area plus a 250m buffer). Define an MCA around the same area to safeguard them from proximal development (site area plus a 250m buffer). <p>Importation Infrastructure (Wharves)</p> <ul style="list-style-type: none"> Option W1: Maintain current capacity by safeguarding all currently operational minerals wharves in West Sussex (2.27mtpa). Option W2: Safeguard wharves in Eastern Harbour Arm at Shoreham and at Littlehampton (ARC Wharf, Halls Wharf, Turberville & Penneys, Railway Wharf) (1.95mtpa capacity). Option W3: Safeguard wharves in Eastern Harbour Arm at Shoreham and at Littlehampton (ARC Wharf, Halls Wharf, Turberville & Penneys, Railway Wharf); and seek safeguarding of potential wharf in Brighton and Hove (2.20mtpa capacity). Option W4: Safeguard wharves in Eastern Harbour Arm at Shoreham and at Littlehampton (ARC Wharf, Halls Wharf, Turberville & Penneys, Railway Wharf); and seek safeguarding of potential wharves in Western Harbour Arm within both West Sussex and Brighton and Hove (2.29mtpa capacity). <p>Importation Infrastructure (Railheads)</p>	<p>Policy M10: Safeguarding Minerals Infrastructure</p> <p>(a) Development on, or near to, sites hosting existing minerals infrastructure that would prevent or prejudice the use of existing minerals infrastructure will not be permitted unless:</p> <ul style="list-style-type: none"> (i) the site or infrastructure is no longer suitable for continued minerals use; or (ii) redevelopment of the site or loss of the infrastructure would form part of a strategy or scheme that has wider social and/or economic benefits that clearly outweigh the retention of the site or the infrastructure for minerals use; and, (iii) a suitable replacement site or infrastructure has been identified and permitted; <p>(b) Where safeguarded infrastructure is situated within a host quarry, wharf or rail depot facility, it is safeguarded for the life of the host site.</p> <p>(c) The following wharves and railheads are safeguarded:</p> <ul style="list-style-type: none"> (i) ARC Wharf, Shoreham (inset map 3) (ii) Turberville and Penneys Wharf, Shoreham (inset map 3) (iii) Halls Wharf, Shoreham (inset map 3) (iv) Rhombus Wharf, Shoreham (inset map 3) (v) Railway Wharf, Littlehampton (inset 	<p>Policy M10 has been informed by Option SM1/E1, W3, RH1 and Option PI2.</p> <p>Option SMI/E1 has been addressed in the supporting text to Policy M10 through reference to a list of safeguarded minerals infrastructure within the Annual Monitoring Report, which includes facilities used for hydrocarbon exploration, appraisal and production. The Wharves and Railheads Study (2014) (commissioned by WSCC and undertaken by LUC) rolled forward a number of assumptions around site capacity that were made in the previous (2008) Wharves and Railheads Study. The options set out within the updated wharves and railheads study were based on the 2008 capacity estimates.</p> <p>Following completion of this study, WSCC contacted a number of key stakeholders for discussions about the way forward. This included the Joint Area Action Plan Authorities, Shoreham Port Authority (SPA), and the</p>

	<ul style="list-style-type: none"> • Option RH1 – Maintain current capacity by safeguarding all currently operational railheads (1.22 mtpa). • Option RH2 – Increase capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads (for example Horsham Sidings). <p style="text-align: center;">Other production infrastructure</p> <ul style="list-style-type: none"> • Option PI1: Safeguard all existing and planned sites for concrete batching, the manufacture of coated materials, and other concrete products. • Option PI2: Safeguard any existing and planned sites for concrete batching, the manufacture of coated materials, and other concrete products and the handling, processing and distribution of substitute (other than secondary and recycled) aggregate material which are not located in the National Park. 	<p>map 4)</p> <p>(vi) Chichester Railway Sidings (inset map 5)</p> <p>(vii) Ardingly Rail Depot (inset map 6)</p> <p>(viii) Tinsley Goods Yard, Crawley (inset map 7)</p> <p>(ix) Crawley Goods Yard (inset map 7)</p> <p>(x) Crawley Goods Yard (inset map 7)</p>	<p>operators of wharves. As the capacity data was out-dated, WSCC officers, through discussions with SPA and operators, updated the capacity estimates of the wharves. These updated estimates meant that the options set out within the Wharves and Railhead Study (2014) were no longer accurate, and as a result a number of new options (building on those within the study) were developed. During discussions with operators, Britannia wharf was put forward to WSCC by SPA as a potential site for long term importation of aggregates, hence its inclusion within the options. WSCC are seeking agreement from ESCC/B&H that Britannia will be safeguarded, which would ensure sufficient capacity is available to provide a steady and adequate supply of aggregates.</p> <p>Option W3 will in effect be taken forward as Britannia Wharf is within Brighton & Hove and the SoCG (April 2014) is being updated to help ensure its safeguarding. Other options have not been taken forward as they could</p>
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			<p>unnecessarily inhibit the regeneration aspirations for Shoreham Harbour.</p> <p>Policy M10 safeguards existing infrastructure sites only, because there are no planned sites to safeguard (Options PI1 and PI2 originally covered this).</p>
Strategic Mineral Sites – Site Options/Allocations			
Sites	<ul style="list-style-type: none"> Hambrook Grouping: <ul style="list-style-type: none"> Woodmancote M.CH.1A Common Road West M.CH.1B Common Road East M.CH.1C Slades Field M.CH.1D Funtington West M.CH.1G Processing Area M.CH.PA Brick Kiln Farm M.CH.4F East of West Heath Common M.CH.7B Minsted West M.CH.8A Severals West M.CH.8C Horncroft M.CH.11 Chantry Lane Extension M.HO.2 Rock Common M.HO.3A Ham Farm M.HO.4 Buncton Manor Farm M.HO.7 Land adjacent to West Hoathly Brickworks 	<p>Policy M11: Strategic Minerals Site Allocations</p> <p>(a) The following site is allocated for soft sand extraction and is acceptable, in principle, for that purpose:</p> <ul style="list-style-type: none"> Ham Farm, Steyning (Inset Map M.HO.4) <p>(b) The following site is allocated for the extraction of clay for brick making and is acceptable, in principle, for that purpose:</p> <ul style="list-style-type: none"> Extension to West Hoathly Brickworks (Inset Map M.MS.1) <p>(c) The development of a site allocated under (a)-(b) must take place in accordance with the policies of this Plan and satisfactorily address the 'development principles' for that site identified in the supporting text to this policy.</p> <p>(d) The sites allocated under (a)-(b) will be safeguarded from any development either on or adjoining the sites that would prevent or prejudice the development of their allocated waste management use or uses.</p>	<p>The Minerals Sites Study explains the authorities' site assessment process and provides reasons for allocating these two sites, but in terms of the reasons for only allocating one soft sand and one clay site:</p> <ul style="list-style-type: none"> - The LAA shows additional sharp sand and gravel sites are not required (also set out in the minerals supply section of the Plan). - Soft sand sites within the SDNP did not pass the exceptional circumstances test. - No other clay sites are required see section 6.5 of the draft Plan.

	M.MS.1		
Development Management Policies			
Character	<p>Character</p> <p>Proposals for mineral development will be permitted provided:</p> <ul style="list-style-type: none"> a) they would not have an unacceptable impact on the character, distinctiveness, sense of place of the different areas of the National Park or County and their settings; b) they reflect and, where possible, reinforce the character of the main natural character areas (including the retention of important features or characteristics); c) they would not have an unacceptable impact on the separate identity of settlements and distinctive character of towns and villages (including specific areas or neighbourhoods) and development would not lead to their actual or perceived coalescence. 	<p>Policy M12: Character</p> <p>Proposals for mineral development will be permitted provided:</p> <ul style="list-style-type: none"> a) they would not have an unacceptable impact on the character, distinctiveness, sense of place of the different areas of the County and the special qualities of the National Park and AONBs and their settings; b) they would not have an unacceptable impact on the separate identity of settlements and distinctive character of towns and villages (including specific areas or neighbourhoods) and development would not lead to their actual or perceived coalescence; c) they reflect and, where possible, reinforce the distinctive attributes of the main character areas (including the retention of important features or characteristics). 	<p>Policy M12 takes forward the draft Character policy.</p>
Landscape	<p>Landscape</p> <ul style="list-style-type: none"> a) Proposals for mineral development within protected landscapes (the South Downs National Park, the Chichester Harbour Area of Outstanding Natural Beauty (AONB), and the High Weald AONB) will not be permitted unless: 	<p>Policy M13: Landscape</p> <ul style="list-style-type: none"> a) Proposals for mineral development within protected landscapes (the South Downs National Park, the Chichester Harbour Area of Outstanding Natural Beauty (AONB), and the High Weald AONB) will not be permitted unless: <ul style="list-style-type: none"> i. the site is allocated for that purpose in the 	<p>Some minor changes have been made, with text previously included now removed and also new text included:</p> <p>Additional criteria (c) ii and change to (c) iii were to</p>

	<p>i) the site is allocated for that purpose in an adopted plan; or</p> <p>ii) the proposal is for a small-scale development¹⁰⁸ to meet local needs that can be accommodated without undermining the objectives of the designation; or</p> <p>iii) the proposal is for major mineral development that accords with part (c) of this Policy.</p> <p>b) Proposals for mineral development located outside protected landscapes will be permitted provided that they do not undermine the objectives of the designation.</p> <p>c) Proposals for major mineral development within protected landscapes will not be permitted unless:</p> <p>(i) there is an overriding need for the development within the designated area; and</p> <p>(ii) the need cannot be met in some other way or met outside the designated area; and</p> <p>(iii) any adverse impacts on the environment, landscape, and recreational opportunities can be satisfactorily mitigated.</p> <p>d) Minerals development in the open countryside, outside the South Downs National Park and Areas of Outstanding Natural Beauty (AONB) will be permitted only in the following circumstances:</p> <p>(i) it is a time-limited mineral extraction or related development; and</p> <p>(ii) consideration is given to the wider landscape character and context of the site (including visual impact) in the design of the scheme</p>	<p>ii. adopted plan; or</p> <p>the proposal is for a small-scale development¹⁰⁹ to meet local needs that can be accommodated without undermining the objectives of the designation; or</p> <p>iii. the proposal is for major mineral development that accords with part (c) of this Policy.</p> <p>(b) Proposals for mineral development located outside protected landscapes will be permitted provided that they do not undermine the objectives of the designation</p> <p>(c) Proposals for mineral development within protected landscapes will not be permitted unless there are exceptional circumstances and that it is in the public interest as informed by an assessment of:</p> <p>i. the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;</p> <p>ii. the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for the mineral in some other way; and</p> <p>iii. any detrimental impact on the environment, landscape, and recreational opportunities, and the extent to which identified impacts can be satisfactorily mitigated.</p>	<p>ensure consistency with national policy.</p> <p>Deletion of criteria d)(i) as it was considered superfluous as all mineral extraction (and related development) is time-limited.</p>
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¹⁰⁸ Definition of small scale development to be provided

¹⁰⁹ Small scale development can be defined as any development that is not major development for the purposes of paragraph 116 of the NPPF. i.e. development which does **not** have the potential to cause a significant adverse impact by reason of its scale, character or nature on the natural beauty, wildlife, cultural heritage and recreational opportunities of the SDNP or AONBs. Examples of small scale development include: ancillary developments such as weighbridges, offices, haul roads and other minor amendments.

	<p>and any mitigation measures proposed, including the need where relevant for planting and landscape proposals to take into account any impacts on the setting of local settlements.</p> <p>(iii) Where appropriate and applicable, development in the countryside will be expected to meet highest standards of design, operation and progressive restoration.</p> <p>(iv) Minerals development in the open countryside should be subject to a requirement that it is restored in the event it is no longer required for minerals use.</p>		
Historic Environment	<p>Historic Environment Proposals for mineral development will be permitted provided that:</p> <p>(a) Heritage assets are conserved and where possible enhanced, unless there are no alternative solutions, and there are overriding reasons which outweigh the need to safeguard the sites or features;</p> <p>(b) they would not adversely affect currently unknown heritage assets with significant archaeological interest; and</p> <p>(c) where appropriate, the further investigation and recording of any heritage assets to be lost (in whole or in part) is undertaken and the results made publicly available.</p>	<p>Policy M14: Historic Environment Proposals for minerals development will be permitted provided that:</p> <p>(a) known features of historic or archaeological importance are conserved and, where possible, enhanced unless there are no alternative solutions and there are overriding reasons which outweigh the need to safeguard the value of sites or features;</p> <p>(b) they would not adversely affect currently unknown heritage assets with significant archaeological interest; and</p> <p>(c) where appropriate, the further investigation and recording of any heritage assets to be lost (in whole or in part) is undertaken and the results made publicly available.</p>	<p>The policy wording has changed to ensure consistency with the NPPF.</p>

Air, Soil and Water Quality	<p>Air, Soil and Water Quality</p> <p>Proposals for mineral development will be permitted provided that:</p> <ul style="list-style-type: none">(a) there are no unacceptable impacts on the intrinsic quality of, and where appropriate the quantity of, air and soil;(b) there are no unacceptable impacts on the management and protection of such resources, including any adverse impacts on Air Quality Management Areas; and(c) they are not located in areas subject to land instability, unless problems can be satisfactorily resolved, or are undertaken in a manner which could give rise to instability in future <p>Proposals for mineral development will be permitted provided that it is demonstrated that they would:</p> <ul style="list-style-type: none">1. not cause unacceptable risk to the quality and quantity of surface and groundwater (including reservoirs);2. not cause changes to groundwater and surface water levels which would result in unacceptable adverse impacts on<ul style="list-style-type: none">i. adjoining land;ii. the quality of groundwater resources or potential groundwater resources; andiii. the potential yield of groundwater resources, river flows or natural habitats.3. protect and where possible enhance, the quality of rivers and other watercourses and water bodies (including within built-up areas); <p>Work beneath the water-table will not be permitted unless there is a comprehensive groundwater management scheme agreed for the construction, operation and restoration of the proposal.</p>	<p>Policy M15: Air and Soil</p> <p>Proposals for mineral development will be permitted provided that:</p> <ul style="list-style-type: none">(a) there are no unacceptable impacts on the intrinsic quality of, and where appropriate the quantity of, air and soil;(b) there are no unacceptable impacts on the management and protection of such resources, including any unacceptable impacts on Air Quality Management Areas; and(c) they are not located in areas subject to land instability, unless problems can be satisfactorily resolved, or are undertaken in a manner which could give rise to instability in future	<p>Policy M15 takes forward the air and soil aspects of the proposed policy. Water Resources have been taken forward in Policy 16 as recommended in the SA of the options (see Appendix 6 and Chapter 5).</p>
		<p>Policy 16: Water Resources</p> <p>Proposals for mineral development will be permitted provided that they would:</p> <ul style="list-style-type: none">(a) not cause unacceptable risk to the quality and quantity of surface water and groundwater (including reservoirs);(b) not cause changes to groundwater and surface water levels which would result in unacceptable adverse impacts on<ul style="list-style-type: none">(i) adjoining land;(ii) the quality of groundwater resources or potential groundwater resources; and(iii) the potential yield of groundwater resources, river flows or natural habitats such as wetlands or heaths;	<p>Policy M16 was created as recommended in the SA of the options (see Appendix 6 and Chapter 5).</p>

		<p>(c) protect and where possible enhance, the quality of rivers and other watercourses and water bodies (including within built-up areas);</p> <p>Work beneath the water-table will not be permitted unless there is a comprehensive groundwater management scheme agreed for the construction, operation and restoration of the proposal.</p>	
Biodiversity and Geodiversity	<p>Biodiversity and Geodiversity</p> <p>Proposals for minerals development will be permitted provided that:</p> <p>(a) areas or sites of international biodiversity and geological importance are protected unless there are no appropriate alternative solutions and there are overriding reasons which outweigh the need to safeguard the value of sites or features;</p> <p>(b) there are no adverse impacts on areas or sites of national biodiversity or geological conservation importance unless the benefits of the development clearly outweigh the impact on the objectives of the designation and on the wider network of such designated areas or sites;</p> <p>(c) there are no adverse impacts on areas, sites or features of regional or local biodiversity or geological conservation importance unless the benefits of the development clearly outweigh the impact on the objectives of the designation;</p> <p>(d) where development would result in the loss of or adversely affect an important area, site or feature, it is demonstrated that the harm will be</p>	<p>Policy M17: Biodiversity and Geodiversity</p> <p>Proposals for minerals development will be permitted provided that:</p> <p>(a) The development will:</p> <ol style="list-style-type: none"> avoid significant harm to wildlife species and habitats; or where significant harm cannot be wholly or partially avoided, ensure that the harm is can be effectively mitigated or; as a last resort, where there is still significant residual harm, ensure proper compensation for that harm; <p>(b) there are no adverse impacts on areas or sites of international or national biodiversity or geological conservation importance unless the benefits of the development clearly outweigh both the impact on the objectives of the designation, and on the wider network of such designated areas or sites;</p> <p>(c) there are no adverse impacts on areas, sites or features of regional or local biodiversity or geological conservation importance unless the benefits of the development clearly outweigh the impact on the objectives of the designation;</p> <p>(d) where appropriate, the creation, enhancement, and management of habitats, ecological networks, geodiversity and ecosystem services shall be secured</p>	<p>Policy M17 has maintained the majority of the previously proposed policy, with the previous criterion a) and b) being covered in the new criterion b), and the previous criterion d) being covered in the new criterion a). The changes were made to ensure consistency with NPPF.</p>

	<p>minimised, mitigated, or compensated for, including, where practicable, the provision of a new resource elsewhere which is of at least equivalent value;</p> <p>(e) where appropriate, the creation, enhancement, and management of habitats, ecological networks, and ecosystem services shall be secured consistent with wider environmental objectives, including Biodiversity Opportunity Areas and the South Downs Way Ahead Nature Improvement Area; and</p> <p>(f) where necessary, the investigation, evaluation, and recording of important sites and features is undertaken and, where appropriate, representative features are preserved.</p>	<p>consistent with wider environmental objectives, including Biodiversity Opportunity Areas and the South Downs Way Ahead Nature Improvement Area; and</p> <p>(e) where necessary, the investigation, evaluation, and recording of important sites and features is undertaken and, where appropriate, representative features are preserved.</p>	
Public Amenity and Health	<p>Public Amenity and Health</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity¹¹⁰;</p> <p>(b) the routes and amenity of public rights of way are safeguarded, or where temporary or permanent re-routeing can be justified, replacement routes of comparable or enhanced amenity value are provided.</p>	<p>Policy M18: Public Health and Amenity</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity¹¹¹;</p> <p>(b) the routes and amenity of public rights of way are safeguarded, or where temporary or permanent re-routeing can be justified, replacement routes of comparable or enhanced amenity value are provided.</p>	Policy M18 is the same as the previous proposed policy.
Flooding	<p>Flooding</p> <p>Proposals for mineral development will be permitted provided that:</p>	<p>Policy M19: Flood Risk Management</p> <p>(a) Proposals for mineral development will be permitted provided that:</p>	Policy M19 is the same as the previous proposed policy.

¹¹⁰ Amenity includes that provided by the South Downs National Park as a potential International Dark Skies Reserve

¹¹¹ Amenity includes that provided by the South Downs National Park as a potential International Dark Skies Reserve

	<ul style="list-style-type: none"> (i) mitigation measures are provided to an appropriate standard so that there would not be an increased risk of flooding on the site or elsewhere throughout the life of the quarry including its restoration and aftercare; (ii) they are compatible with Shoreline Management Plans and/or Catchment Flood Management Plans and the integrity of functional floodplains is maintained; (iii) appropriate measures are used to manage surface water run-off including, where appropriate, the use of sustainable drainage systems (SUDS); and (iv) they would not have an unacceptable impact on the integrity of sea, tidal, or fluvial flood defences, or impede access for future maintenance and improvements of such defences. 	<ul style="list-style-type: none"> (i) mitigation measures are provided to an appropriate standard so that there would not be an increased risk of flooding on the site or elsewhere throughout the life of the quarry including its restoration and aftercare; (ii) they are compatible with Shoreline Management Plans and/or Catchment Flood Management Plans and the integrity of functional floodplains is maintained; (iii) appropriate measures are used to manage surface water run-off including, where appropriate, the use of sustainable drainage systems (SUDS); and (iv) they would not have an unacceptable impact on the integrity of sea, tidal, or fluvial flood defences, or impede access for future maintenance and improvements of such defences. 	
Transport	<p>Transport</p> <p>Proposals for mineral development will be permitted provided that:</p> <ul style="list-style-type: none"> (a) where practicable and viable, the proposal makes use of rail or water for the transportation of materials to and from the site; (b) transport links are adequate to serve the development or can be improved to an appropriate standard without an unacceptable impact on amenity, character, or the environment; and (c) where the need for road transport can be demonstrated: 	<p>Policy M20: Transport</p> <p>Proposals for mineral development will be permitted provided that:</p> <ul style="list-style-type: none"> (a) where practicable and viable, the proposal makes use of rail or water for the transportation of materials to and from the site; (b) transport links are adequate to serve the development or can be improved to an appropriate standard without an unacceptable impact on amenity, character, or the environment; and (c) where the need for road transport is demonstrated: 	Policy M20 is the same as the previous proposed policy.

	<ul style="list-style-type: none"> (i) materials are capable of being transported using the Advisory Lorry Route with minimal use of local roads, unless special justification can be shown; (ii) vehicle movements associated with the development will not have an unacceptable impact on the capacity of the highway network; (iii) there is safe and adequate means of access to the highway network and vehicle movements associated with the development will not have a severe impact on the safety of all road users; (iv) satisfactory provision is made for vehicle turning and parking, manoeuvring, loading, and, where appropriate, wheel cleaning facilities; and (v) vehicle movements are minimised by the optimal use of the vehicle fleet. 	<ul style="list-style-type: none"> (i) materials are capable of being transported using the Lorry Route network with minimal use of local roads, unless special justification can be shown; (ii) vehicle movements associated with the development will not have an unacceptable impact on the capacity of the highway network; (iii) there is safe and adequate means of access to the highway network and vehicle movements associated with the development will not have a severe impact on the safety of all road users; (iv) satisfactory provision is made for vehicle turning and parking, manoeuvring, loading, and, where appropriate, wheel cleaning facilities; and (v) vehicle movements are minimised by the optimal use of the vehicle fleet. 	
Aerodrome Safeguarding	<p>Aerodrome Safeguarding</p> <p>Proposals for minerals development will be permitted provided that they will not adversely affect the operational integrity or safety of aviation facilities.</p> <p>After-uses for mineral workings must be designed in a manner to avoid increased risk of bird strike.</p>	<p>Policy M21: Aerodrome Safeguarding</p> <p>Proposals for minerals development will be permitted provided that they will not adversely affect the operational integrity or safety of aviation facilities.</p>	Policy M20 is the same as the previous proposed policy, however bird strike has been removed from the policy to the supporting text as it was considered to be too specific.
Cumulative Impact	Cumulative Impact	Policy M22: Cumulative Impact	Policy M22 is the same as

	Proposals for minerals development, including the intensification of use ¹¹² will be permitted provided that an unreasonable level of disturbance to the environment and/or local communities will not result from minerals development either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. Planning conditions may be used to co-ordinate working, thereby reducing the cumulative impact.	Proposals for minerals development, including the intensification of use will be permitted provided that an unreasonable level of disturbance to the environment and/or to residents, businesses and visitors will not result from minerals development either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. Planning conditions may be used to co-ordinate working, thereby reducing the cumulative impact.	the previous proposed policy.
Design and Operation of Mineral Developments	<p>Design and Operation of Mineral Developments</p> <p>Proposals for minerals development will be permitted provided that, where appropriate, the scale, form, and layout (including landscaping) take into account the need to:</p> <ul style="list-style-type: none"> (a) integrate with and, where possible, enhance adjoining land-uses and minimise potential conflicts between land-uses and activities; (b) have regard to the local context including: <ul style="list-style-type: none"> (i) the varied traditions and character of the different parts of West Sussex and the South Downs National Park; (ii) the characteristics of the site in terms of topography, and natural and man-made features; (iii) the topography, landscape, townscape, streetscape and skyline of the surrounding area; (iv) views into and out of the site; (c) include measures to: 	<p>Policy M23: Design and Operation of Mineral Developments</p> <p>Proposals for minerals development will be permitted provided that, where appropriate, the scale, form, and layout (including landscaping) take into account the need to:</p> <ul style="list-style-type: none"> (a) integrate with and, where possible, enhance adjoining land-uses and minimise potential conflicts between land-uses and activities; (b) have regard to the local context including: <ul style="list-style-type: none"> (i) the varied traditions and character of the different parts of West Sussex and the South Downs National Park (ii) the characteristics of the site in terms of topography, and natural and man-made features; (iii) the topography, landscape, townscape, streetscape and skyline of the surrounding area; (iv) views into and out of the site; (c) include measures to: 	<p>Policy M23 is the same as the previous proposed policy. However, the text highlighted regarding 'Operation of Sites' has been removed and included in the supporting text in the draft Plan.</p> <p>This has been moved to the supporting text as it is considered that the earlier policy had merely described what should be submitted with a planning application not how a site should perform. The correct mechanism for ensuring complete applications is through the validation process and it is anticipated that the text in the supporting text will help inform the validation process.</p>

¹¹² 'Intensification of use' includes physical or temporal extensions to existing sites and/or increases in activity at sites including those related to increases in rates of mineral working and/or processing.

	<ul style="list-style-type: none"> • maximise water and energy efficiency • avoid or at least minimise greenhouse gas emissions, • minimise the use of non-renewable energy, and to maximise the use of lower-carbon energy generation (including heat recovery and the recovery of energy from gas); and • ensure resilience and enable adaptation to a changing climate. <p>Operation of Sites</p> <p>Proposals for, mineral extraction / processing, and associated activities should be accompanied by a working programme for the proposed operation which includes arrangements as applicable for the scale and nature of the operation, for:</p> <ul style="list-style-type: none"> (a.) site preparation; (b.) phasing of workings/construction (c.) plant and machinery to be used; (d.) location of site roads, material storage areas, buildings and provision of screening of working areas and cleaning of vehicles; (e.) protection of existing features of cultural and landscape significance. (f.) a mitigation/compensation scheme for any other environmental impacts and enhancements; and (g.) a landscaping scheme for the operational life of the site to include a means of screening the proposed development, including planting, with native species where appropriate, to maximise opportunities for habitat creation and supported by a management plan. <p>Proposals for mineral extraction should additionally set out the arrangements for:</p> <ul style="list-style-type: none"> (a.) stripping, storage and re-spreading of 	<ul style="list-style-type: none"> (i) maximise water and energy efficiency (ii) avoid or at least minimise greenhouse gas emissions, (iii) minimise the use of non-renewable energy, and maximise the use of lower-carbon energy generation (including heat recovery and the recovery of energy from gas); and (iv) ensure resilience and enable adaptation to a changing climate. 	
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	soils; (b.) appropriate stockpiling; (c.) the order and direction of workings and methods of extraction.		
Plant, processing and secondary activities	<p>Plant, processing and secondary activities</p> <p>Proposals for secondary mineral processing and /or ancillary activities such as concrete batching and blending will be expected to be the subject of separate applications and may be permitted provided that:</p> <p>(a.) it can be demonstrated that the proposed operations:</p> <ul style="list-style-type: none"> • have a significant link to the existing operations on site; • will not become the main development at the site. <p>(b.) the overall restoration scheme and progressive restoration of the site is not unduly delayed or prolonged or in some other way jeopardised;</p> <p>(c.) the duration of operations is tied to that of the primary operation;</p> <p>(d.) The proposal is consistent with other policies of the development plan</p>	See policy M8	This draft policy was moved out of the development management policies and into the strategic policies (see policy M8 above).
Restoration	<p>Restoration of quarries</p> <p>Proposals for mineral development will be permitted provided that they are accompanied by comprehensive schemes that:</p> <p>(a) ensure that that land is restored at the earliest opportunity including, where appropriate, by phased, or progressive restoration.</p> <p>(b) make provision for high quality and practicable restoration, management, and aftercare;</p>	<p>Policy M24: Restoration and Aftercare</p> <p>Proposals for mineral extraction and temporary minerals infrastructure development will be permitted provided that they are accompanied by comprehensive schemes that:</p> <p>(a) ensure that that land is restored at the earliest opportunity including, where appropriate, by phased, or progressive restoration;</p> <p>(b) make provision for high quality and practicable restoration, management, and</p>	Policy M24 is largely the same as the previous, apart from the change to the first paragraph that specifically covers different elements of mineral development. Criterion 'e' and 'f' that covers soil and water respectively have been included as recommended by the SA (see Appendix 6 and Chapter 5).

	<p>(c) are appropriate for their locations, maximising benefits taking into account local landscape character, the historic environment, biodiversity, and wider environmental objectives;</p> <p>(d) where appropriate, re-instate, and/or re-route, and where possible, improve of public rights of way such that and maximise public amenity benefits;</p> <p>(e) provide for the removal of all buildings, machinery and plant when no longer required in connection with the principal use unless their removal conflicts with the agreed restoration scheme.</p>	<p>aftercare;</p> <p>(c) are appropriate to their locations, maximising benefits taking into account local landscape character, the historic environment, biodiversity gain, priority habitat conservation and wider environmental objectives;</p> <p>(d) where appropriate, re-instate, and/or re-route, and where possible, improve of public rights of way and maximise public amenity benefits; and</p> <p>(e) provide for the removal of all buildings, machinery and plant when no longer required in connection with the principal use unless their removal conflicts with the agreed restoration scheme;</p> <p>(f) ensure that soil resources are retained, conserved and handled appropriately during operations and restoration;</p> <p>preserve, maintain and where appropriate, manage, hydrogeological and hydrological conditions to prevent adverse impacts on groundwater conditions or increased flood risk onsite or elsewhere.</p>	
Community benefits and engagement	<p>Community benefits and engagement</p> <p>Proposals for minerals development will be permitted provided that, where necessary, a site liaison group is established by the operator to address issues arising from the operation of a minerals development or facility.</p> <p>Operators should conduct early engagement with local communities prior to submission of an application, and reflect the outcome of those discussions in the design of proposals as far as</p>	<p>Policy M25: Community and Engagement</p> <p>Proposals for minerals development will be permitted provided that, where necessary, a site liaison group is established by the operator to address issues arising from the operation of a minerals development or facility.</p>	<p>Policy M25 is the same as the previous proposed policy. However, the second paragraph has been removed and included in the supporting text in the draft Plan. Because it was considered not appropriate for inclusion in policy as decisions on developments will be based on what is</p>

	practicable.		proposed and not the way in which those proposals have been prepared.
Secondary and Recycled Aggregate	Option SRA1 - Use secondary/recycled aggregate in construction	<p>Policy M26: Maximising the use of Secondary and Recycled Aggregates</p> <p>Proposals for development will be permitted provided that opportunities for the use of secondary and recycled aggregates, and building products made from secondary aggregates and recycled are maximised.</p>	Policy M26 has taken Option SRA1 forward. Supporting text has been included in the draft Plan that covers the comments/recommendations included in the SA of Option SRA1.

Table A4.2: Policy evolution between Regulation 18 and Regulation 19 consultation on the JMLP, including the WSCC and SDNPA reasons for changes to policies

Topic	Regulation 18 Draft JMLP (April 2016)	Regulation 19 Draft JMLP (January 2017)	Plan-makers' justification for changes to draft policies now included in Regulation 19 Draft JMLP (January 2017)
Vision			
Overarching	<p>By 2033, West Sussex:</p> <p>Will be a place where minerals are produced in ways which conserve and enhance the beautiful outdoors of West Sussex, in particular the special qualities of the South Downs National Park, for the benefit of current and future generations.</p> <p>Will be a place where the production and transportation of minerals does not detract from it having thriving communities and being a special place to live and visit. In particular impact associated with the transport of minerals by road will have been minimised.</p> <p>Will have contributed to the supply of minerals, in particular aggregates, clay, chalk, building stone and oil and gas, to support growth in West Sussex. In particular social and economic progress of both the Coastal West Sussex and Gatwick Diamond strategic growth areas will have been supported through the provision of aggregate to enable the delivery of new development.</p> <p>Will be a place which seeks to meet its own needs for minerals while aspiring to source more and more minerals from alternatives to extraction of indigenous resources, and from areas outside the South Downs National Park and Areas of Outstanding Natural Beauty.</p> <p>Will have made a contribution to the needs of other</p>	<p>West Sussex:</p> <p>Will be a place where minerals are produced in ways which conserve and enhance the beautiful outdoors of West Sussex, including the special qualities of the South Downs National Park and Areas of Outstanding Natural Beauty, for the benefit of current and future generations.</p> <p>Will have contributed to the supply of minerals, in particular, aggregates, clay, chalk, building stone, silica sand and oil and gas, to support growth in West Sussex. In particular social and economic progress of both the Coastal West Sussex and Gatwick Diamond strategic growth areas will be supported through the provision of aggregate to enable the delivery of new development.</p> <p>Will be a place which seeks to meet its own needs for minerals and encourage the sustainable use of natural resources, whilst aspiring to source more and more minerals from alternatives to primary extraction, and from areas outside the South Downs National Park and Areas of Outstanding Natural Beauty.</p> <p>Will make a contribution to the needs of other areas in a manner which is consistent with this Vision, in particular by ensuring the supply of minerals via ports at Shoreham and Littlehampton and railheads at Chichester, Crawley and Ardingly.</p> <p>Will be a place where the production and transportation of minerals does not detract from it having thriving</p>	<p>Text added relating to Areas of Outstanding Natural Beauty so it is clear that, along with the South Downs National Park, these areas also have special protection</p> <p>Silica sand is a mineral resource present in West Sussex and so needs to be recognised alongside other minerals in the Vision.</p> <p>Changes to indent 4 to make the meaning of this paragraph clearer including clarification that the use of mineral resources should be sustainable.</p> <p>Additional paragraph added regarding transportation to cover potential conflict with respect to reducing transportation versus possible increase in imports.</p> <p>Other changes made to improve clarity of the Vision.</p>

	<p>areas in a manner which is consistent with this Vision, in particular by ensuring the supply of minerals via ports at Shoreham and Littlehampton and railheads at Chichester, Crawley and Ardingly.</p> <p>Will have ensured minerals have been produced in a manner that protects and enhances the historic and natural environment, and contributes to a low carbon, circular economy.</p> <p>Will have safeguarded valuable mineral resources, including the soft and silica sand of the Folkestone Beds, the sharp sand and gravel around Chichester, clay needed for individual brickworks, and building stone from needless sterilisation by other development.</p> <p>Be a place where the use of locally produced bricks and locally sourced stone, particularly Horsham Stone, Hythe Sandstone, Ardingly Sandstone and flint, has enhanced local distinctiveness and the rich archaeological heritage will have been protected.</p> <p>Be a place where mineral sites are restored to the highest standards, leading to larger, better managed and connected green infrastructure and areas of habitat including lowland heath, woodland and wetland habitats and conserved and enhanced populations of priority species. Restored sites will increase opportunities for recreation and responsible tourism and for habitat creation within the South Downs National Park, recognising the purposes of the SDNP.</p>	<p>communities and being a special place to live and visit. In particular, impacts resulting from the use of heavy vehicles in transporting minerals will have been minimised.</p> <p>Will ensure minerals have been produced in a manner that protects and enhances the historic and natural environment, and contributes to a low carbon, circular economy.</p> <p>Will safeguard valuable mineral resources, including the soft and silica sand of the Folkestone Beds, the sharp sand and gravel around Chichester, clay needed for individual brickworks, and building stone from needless sterilisation by other development.</p> <p>Will be a place where the use of locally produced bricks and locally sourced stone, particularly Horsham Stone, Hythe Sandstone, Ardingly Sandstone and flint, enhances local distinctiveness and the rich archaeological heritage will be protected.</p> <p>Will be a place where mineral sites are restored to the highest standards, leading to larger, better managed and connected green infrastructure and areas of habitat including lowland heath, woodland and wetland habitats and conserved and enhanced populations of priority species. Restored sites will increase opportunities for recreation and responsible tourism and for habitat creation.</p>	
Strategic Objectives			
Overarching	<ol style="list-style-type: none"> 1. To promote the prudent and efficient production and use of minerals, having regard to the market demand and constraints on supply in the Plan area. 2. To maximise and prioritise the supply and use of secondary and recycled aggregates before supply and use of primary sources. In particular to reduce reliance on land-won aggregates. 	<ol style="list-style-type: none"> 1. To promote the prudent and efficient supply and use of minerals, having regard to the market demand and constraints on supply in the Plan area. 2. To maximise and prioritise the supply and use of secondary and recycled aggregates before supply and use of primary sources; in particular to reduce reliance on land-won aggregates. 	<p>Change to SO1: Term 'supply' used in place of 'production' for consistency with NPPF.</p> <p>Other changes to objectives and preamble have been</p>

	<ol style="list-style-type: none"> 3. To make provision for soft sand to meet the needs of West Sussex from outside the South Downs National Park, where possible; and only make provision for a declining amount of extraction within the SDNP over the plan period. 4. To protect the South Downs National Park by only providing for silica sand from within it in exceptional circumstances and when in the public interest. 5. To protect and maintain the existing mineral development sites and infrastructure including capacity for importation of minerals via the ports of Littlehampton and Shoreham and the railheads at Chichester, Crawley and Ardingly. 6. To safeguard potential economically viable mineral resources from sterilisation. 7. To protect, and where possible, enhance the health and amenity of residents, businesses and visitors. 8. To conserve and enhance the landscape and townscape character of West Sussex and the special qualities and local distinctiveness of the South Downs National Park, High Weald AONB and Chichester Harbour AONB and their settings. 9. To protect and, where possible, enhance the natural and historic environment and resources of West Sussex. 10. To minimise the risk to people and property from flooding, safeguard water resources, including aquifers, from contamination, and ensure the quality and quantity of the water environment is conserved and enhanced. 	<ol style="list-style-type: none"> 3. To make provision for soft sand to meet the needs of West Sussex from outside the South Downs National Park, where possible; and only make provision for a declining amount of extraction within the SDNP over the Plan period. 4. To protect the South Downs National Park by only providing for silica sand from within it in exceptional circumstances and when in the public interest. 5. To protect and maintain the existing mineral development sites and infrastructure including capacity for importation of minerals via the ports of Littlehampton and Shoreham and the railheads at Chichester, Crawley and Ardingly. 6. To safeguard potential economically viable mineral resources from sterilisation. 7. To protect, and where possible enhance, the health and amenity of residents, businesses and visitors 8. To conserve and enhance the landscape and townscape character of West Sussex and the special qualities and local distinctiveness of the South Downs National Park, High Weald AONB and Chichester Harbour AONB and their settings. 9. To protect and, where possible, enhance the natural and historic environment and resources of West Sussex. 10. To minimise the risk to people and property from flooding; to safeguard water resources, including aquifers and surface waters, from contamination; to ensure the quality and quantity of the water environment is conserved and enhanced 11. To maximise the use of rail and water transport for 	<p>made to improve clarity of meaning of the objectives.</p>
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	<p>11. To maximise the use of rail and water transport for the movement of minerals and to minimise lorry movements and the use of local roads for minerals.</p> <p>12. To protect the environment and local communities in West Sussex from unacceptable impacts of any proposal for oil and gas development, whilst recognising the national commitment to maintain and enhance energy security in the UK.</p> <p>13. To ensure high quality mitigation and restoration to appropriate after uses.</p> <p>14. To minimise carbon emissions and to adapt to, and to mitigate the potential adverse impacts of, climate change.</p>	<p>the movement of minerals and to minimise lorry movements and the use of local roads for minerals</p> <p>12. To protect the environment and local communities in West Sussex from unacceptable impacts of any proposal for oil and gas development, whilst recognising the national commitment to maintain and enhance energy security in the UK</p> <p>13. To ensure high quality mitigation and restoration to appropriate after uses.</p> <p>14. To minimise carbon emissions and to adapt to, and to mitigate the potential adverse impacts of, climate change.</p>	
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Strategic Minerals Supply – Policy Options/ Draft Policies

Sharp sand and gravel	<p>Policy M1: Sharp sand and gravel</p> <p>Proposals for land won sharp sand and gravel extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> a) the proposal is needed to ensure that a landbank equivalent to at least seven years supply is maintained; b) the proposal is located outside the AONB¹¹³/South Downs National Park unless there are exceptional circumstances and that it 	<p>Policy M1: Sharp sand and gravel</p> <p>Proposals for land won sharp sand and gravel extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (a) the proposal is needed to ensure a steady and adequate supply is maintained; and (b) the proposal is located outside the AONB¹¹⁴/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in 	<p>Change made to clause 'a)' to improve effectiveness of policy as any proposal, regardless of its size, would help ensure that a landbank equivalent to at least seven years supply is maintained. The change also more closely reflects the supply position demonstrated by landbank calculations which indicate that, over the life of the Plan, there is no need</p>
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¹¹³ AONBs include Chichester Harbour.

¹¹⁴ AONBs include Chichester Harbour

	<p>is in the public interest, in accordance with Policy M13, to locate within those areas;</p> <p>c) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>accordance with Policy M13, to locate within those areas; and</p> <p>(c) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>for additional land won sharp sand and gravel sites to meet demand. However it is considered that a specific clause is still required to address the question of whether the mineral to be supplied by a proposal is required.</p>
Soft Sand	<p>Policy M2: Soft Sand</p> <p>Proposals for land won soft sand extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <p>a) it can be demonstrated that extraction cannot take place on the site allocated within Policy M11 of this plan;</p> <p>b) the proposal contributes to the maintenance of at least a seven year landbank;</p> <p>c) the proposal is located outside the South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas;</p> <p>d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>Policy M2: Soft Sand</p> <p>Proposals for land won soft sand extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <p>a) the site is allocated within Policy M11 of this plan; or</p> <p>b) the proposal is located outside the South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within the Park; and</p> <p>c) the proposal is needed to ensure a steady and adequate supply is maintained; and</p> <p>d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>Clause 'a)' amended as the fact that the plan has only allocated one site which is not sufficient to meet the theoretical supply requirements means that it is not appropriate to necessarily direct development to the allocated site in the first instance.</p> <p>Original text of clause 'b)' deleted to ensure effectiveness of policy as any proposal, regardless of its size, would help ensure that a landbank equivalent to at least seven years supply is maintained. New clause added to reflect any proposal should demonstrate that it is needed to meet a steady and adequate supply.</p>

Silica Sand	<p>Policy M3: Silica Sand</p> <p>Proposals for silica sand extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (a) There is a demonstrable need for silica sand of a specific quality and quantity that will be met by the proposal; (b) the proposal will contribute to maintaining a stock of permitted reserves of at least 10 years for individual sites and 15 years for sites where significant new capital is required, to support the level of actual and proposed investment required for new or existing plant and the maintenance and improvement of existing plant and equipment; (c) the proposal is located outside the South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas; (d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network. 	<p>Policy M3: Silica Sand</p> <p>Proposals for silica sand extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (a) There is a demonstrable need for silica sand of a specific quality and quantity that will be met by the proposal; (b) the proposal will contribute to maintaining a stock of permitted reserves of at least 10 years for individual sites and 15 years for sites where significant new capital is required, to support the level of actual and proposed investment required for new or existing plant and the maintenance and improvement of existing plant and equipment; (c) the proposal is located outside the South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within the Park; and (d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network. 	Minor change to improve clarity.
Chalk	<p>Policy M4: Chalk</p> <p>Proposals will be permitted for small scale chalk extraction, including extensions of time and physical extensions to existing sites, provided that:</p> <ul style="list-style-type: none"> (a) There is a demonstrable need for the material for local use, such as an agricultural lime, building stone for repair 	<p>Policy M4: Chalk</p> <p>Proposals will be permitted for chalk extraction, including extensions of time and physical extensions to existing sites, provided that:</p> <ul style="list-style-type: none"> (a) there is a demonstrable need for the material for local use, such as an agricultural lime, building stone for repair 	The term 'small scale' is deleted to improve the effectiveness of the policy. This is because it is not clear what this means and it is not possible to justify a specific extraction rate below which a proposal would be considered 'small

	<p>of historic buildings or another local use;</p> <p>(b) the chalk cannot be reasonably sourced from existing permitted quarries;</p> <p>(c) they are located outside the AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas;</p> <p>(d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>of historic buildings or another local use;</p> <p>(b) the chalk cannot be reasonably sourced from existing permitted quarries;</p> <p>(c) they are located outside the South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within the Park; and</p> <p>(d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>scale'. Indeed a site that is large in overall size but has a low extraction rate would not be considered to be 'small scale'. It is considered that other clauses will better control the scale of development.</p>
Clay	<p>Policy M5: Clay</p> <p>(a) Proposals will be permitted for the extraction of clay provided that:</p> <p>(i) they would maintain a landbank of at least 25 years of permitted clay reserves for individual brickworks; or</p> <p>(ii) the type of clay required is not available at currently permitted sites and is needed to provide an appropriate blend for the manufacture of bricks.</p> <p>(b) Proposals for the small scale extraction of clay, for uses other than brick making, will be permitted provided that:</p> <p>(i) there is a need for the clay for engineering purposes;</p> <p>(ii) the clay cannot be used for brick-making; or</p> <p>(iii) the resource is within an existing sand and gravel quarry and the extraction of clay would be ancillary to the extraction of sand</p>	<p>Policy M5: Clay</p> <p>(a) Proposals will be permitted for the extraction of brick clay provided that:</p> <p>(i) they would help maintain a landbank of at least 25 years of permitted clay reserves for individual brickworks; and</p> <p>(ii) where the clay required for appropriate blending for manufacture of bricks is no longer available adjacent to the brick making factory.</p> <p>(b) Proposals for the extraction of clay, for uses other than brick making, will be permitted provided that:</p> <p>(i) there is a need for the clay for engineering purposes; and</p> <p>(ii) the clay cannot be used for brick-making; or</p> <p>(iii) the resource is within an existing sand and gravel quarry and the extraction of clay would be ancillary to the extraction of sand and gravel.</p>	<p>Changes have been made to make the policy clearer and so ensure its effectiveness. The original outcomes anticipated by the original wording of the policy have not changed.</p>

	<p>and gravel.</p> <p>(c) Proposals that accord with Part (a) or (b) will be permitted provided that:</p> <ul style="list-style-type: none"> (i) They are located outside the AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13 , to locate within those areas; (ii) they are extensions of time and/or physical extensions to existing clay pits or, where this is not possible, they should be sited as close as possible to the site where the clay will be used; (iii) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network. 	<p>(c) Proposals that accord with Part (a) or (b) will be permitted provided that:</p> <ul style="list-style-type: none"> (i) They are located outside the High Weald AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M13, to locate within those areas; (ii) they are extensions of time and and/or physical extensions to existing clay pits or, where this is not possible, they should be sited as close as possible to the site where the clay will be used; (iii) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network. 	
Building Stone	<p>Policy M6: Stone</p> <p>Proposals will be permitted for small scale¹¹⁵ extraction of building stone, including extensions of time and physical extensions to existing sites, provided that:</p> <ul style="list-style-type: none"> a) They are needed to provide suitable local building stone necessary for restoration work associated with the maintenance of historic buildings and structures and new build projects; b) the stone cannot be reasonably sourced 	<p>Policy M6: Building Stone</p> <p>Proposals will be permitted for extraction of building stone, including extensions of time and physical extensions to existing sites, provided that:</p> <ul style="list-style-type: none"> a) They are needed to provide suitable local building stone necessary for restoration work associated with the maintenance of historic buildings and structures and new build projects; b) the stone cannot be reasonably sourced 	<p>The term 'small scale' is deleted to improve the effectiveness of the policy. This is because it is not clear what this means and it is not possible to justify a specific extraction rate below which a proposal would be considered 'small scale'. Indeed a site that is large in overall size but has a low extraction rate would not be considered to be 'small scale'. It is considered</p>

¹¹⁵ A small-scale building stone extraction site is one that produces predominantly building stone for conservation and restoration of old buildings or for new build purposes in areas where the stone provides historically authentic materials in keeping with the local built environment. Operations are likely to be intermittent and volumes produced are low.

	<p>from existing permitted quarries:</p> <p>c) they are located outside the AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M14, to locate within those areas;</p> <p>d) There transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>from existing permitted quarries;</p> <p>c) they are located outside the High Weald AONB/South Downs National Park unless there are exceptional circumstances and that it is in the public interest, in accordance with Policy M14, to locate within those areas; and</p> <p>d) where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.</p>	<p>that other clauses will better control the scale of development.</p>
Oil & Gas (Hydrocarbons)	<p>Policy M7a: Hydrocarbon development not involving hydraulic fracturing</p> <p><i>Exploration and Appraisal</i></p> <p>(a) Proposals for exploration and appraisal for oil and gas, not involving hydraulic fracturing, including extensions* to existing sites will be permitted provided that:</p> <p>(i) the site is located outside the South Downs National Park, High Weald AONB or Chichester Harbour AONB unless it has been demonstrated that there are exceptional circumstances and that it is in the public interest in accordance with Policy M13;</p> <p>(ii) the site selected is the least sensitive, deliverable location from which the target reservoir can be accessed, taking into account impacts from on-site activities and off-site activities including HGV</p>	<p>Policy M7a: Hydrocarbon development not involving hydraulic fracturing</p> <p><i>Exploration and Appraisal</i></p> <p>(a) Proposals for exploration and appraisal for oil and gas, not involving hydraulic fracturing, including extensions* to existing sites will be permitted provided that:</p> <p>(i) With regard to development proposals deemed to be major, the site is located outside the South Downs National Park, High Weald AONB or Chichester Harbour AONB unless it has been demonstrated that there are exceptional circumstances and that it is in the public interest, and in accordance with Policy M13;</p> <p>(ii) the site selected is the least sensitive, deliverable location from which the target reservoir can be accessed, taking into account impacts from on-site activities and off-site activities including HGV movements;</p>	<p>Text added to clause (a) (i) to ensure policy is consistent with para 116 of the NPPF. Other changes made for purposes of clarification (e.g. direct reference to specific matters) and so help ensure effectiveness. The outcomes envisaged by the original text of the policy have not changed.</p>

	<p>movements;</p> <p>(iii) any adverse impacts including (but not limited to) noise, dust, visual intrusion, transport, and lighting, on both the environment and local community, including air quality and the water environment, can be minimised, and/or mitigated, to an acceptable level;</p> <p>(iv) restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or not oil or gas is found.</p> <p><i>Production</i></p> <p>(b) Proposals for oil and gas production, not involving hydraulic fracturing, including extensions* to existing sites, will be permitted provided that:</p> <p>(i) they accord with (a)(i-iv) above;</p> <p>(ii) no significant adverse impacts would arise from the transport of oil/gas and water from the site;</p> <p>(iii) the restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M25; and</p> <p><i>Activity beneath or proximate to designated areas</i></p> <p>(c) Proposals for exploration, appraisal and production of oil and gas, not involving hydraulic fracturing, will be permitted underneath or in close proximity to the South Downs National Park, AONBs, Source Protection Zone 1 and Sites of Special</p>	<p>(iii) any unacceptable impacts including (but not limited to) noise, dust, visual intrusion, transport, and lighting, on both the natural and built environment and local community, including air quality and the water environment, can be minimised, and/or mitigated, to an acceptable level;</p> <p>(iv) restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or not oil or gas is found;</p> <p>(v) No unacceptable impacts would arise from the on-site storage or treatment of hazardous substances and/or contaminated fluids above or below ground.</p> <p><i>Production</i></p> <p>(b) Proposals for oil and gas production, not involving hydraulic fracturing, including extensions* to existing sites, will be permitted provided that:</p> <p>(i) they accord with (a)(i-v) above;</p> <p>(ii) no unacceptable impacts would arise from the transport, by vehicle or other means, of oil/gas, water, consumables and waste to or from the site;</p> <p>(iii) the restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24.</p> <p>(iv) No unacceptable impacts would arise from the on-site storage or treatment of hazardous substances and/or contaminated fluids above or below ground.</p> <p><i>Activity beneath or proximate to designated areas</i></p> <p>(c) Proposals for exploration, appraisal and</p>	
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	<p>Scientific Interest which demonstrate that special care will be taken to avoid harming the setting and/or special qualities and/or value of these designated areas.</p> <p>* including physical extensions or extensions to operations within the existing site boundary. N.B. The suitability of proposals for alterations to permitted operations will be considered against the Development Management policies.</p>	<p>production of oil and gas, not involving hydraulic fracturing, will be permitted underneath or in close proximity to designated areas, assets and habitats¹¹⁶, which demonstrate that special care will be taken to avoid harming the setting and/or special qualities and/or value of these designated areas, assets and habitats.</p> <p>* including extensions of time, physical extensions or extensions to operations within the existing site boundary. N.B. The suitability of proposals for alterations to permitted operations will be considered against the Development Management policies.</p>	
Oil & Gas (Hydrocarbons)	<p>Policy M7b: Hydrocarbon development involving hydraulic fracturing</p> <p><i>Exploration and Appraisal</i></p> <p>(a) Proposals for exploration and appraisal for oil and gas, involving hydraulic fracturing, including extensions* to existing sites will be permitted provided that:</p> <ul style="list-style-type: none"> (i) any surface development is located outside the following areas (as shown on the policies map): <ul style="list-style-type: none"> i. South Downs National Park ii. Chichester Harbour AONB iii. High Weald AONB iv. Source protection zone 1; v. Sites of Special Scientific Interest (SSSI) 	<p>Policy M7b: Hydrocarbon development involving hydraulic fracturing</p> <p><i>Exploration and Appraisal</i></p> <p>(a) Proposals for exploration and appraisal for oil and gas, involving hydraulic fracturing, including extensions* to existing sites will be permitted provided that:</p> <ul style="list-style-type: none"> (i) any surface development is located outside the following areas (as shown on the policies map): <ul style="list-style-type: none"> i. South Downs National Park ii. Chichester Harbour AONB iii. High Weald AONB iv. Groundwater Source Protection zone 1; v. Sites of Special Scientific Interest (SSSI) vi. Any other area given specific protection from hydraulic fracturing in legislation 	<p>Changes made for purposes of clarification (e.g. direct reference to specific matters) and so help ensure effectiveness. The outcomes envisaged by the original text of the policy have not changed.</p>

¹¹⁶ Designated areas and habitats include all areas and habitats designated and protected by international and national legislation including South Downs National Park, AONBs, SSSIs, SAC, SPAs, Ramsar sites, NNRS, heritage assets, sites identified under the Nature Conservation Review (NCR) or Geological Conservation Review (GCR), LNRs, SNCIs and RIGS, Ancient Woodland, Conservation Areas, Scheduled Monuments, Registered Parks and Gardens of Special Historic Interest.

	<ul style="list-style-type: none"> (ii) the site selected is shown to be the least sensitive, deliverable location from which the target reservoir can be accessed, taking into account impacts from on-site activities and off-site activities including HGV movements; (iii) any adverse impacts including (but not limited to) noise, dust, visual intrusion, transport, and lighting, on both the environment and local community, including air quality and the water environment, can be minimised, and/or mitigated, to an acceptable level; (iv) restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or not oil or gas is found. <p><i>Production</i></p> <p>(b) Proposals for oil and gas production, involving hydraulic fracturing, including extensions* to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (i) they accord with (a)(i-iv) above; (ii) no significant adverse impacts would arise 	<ul style="list-style-type: none"> (ii) the site selected is the least sensitive, deliverable location from which the target reservoir can be accessed, taking into account impacts from on-site activities and off-site activities including HGV movements; (iii) any adverse impacts including (but not limited to) noise, dust, visual intrusion, transport, and lighting, on both the natural and built environment and local community, including air quality and the water environment, can be minimised, and/or mitigated, to an acceptable level; (iv) restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or not oil or gas is found. (v) No unacceptable impacts would arise from the on-site storage or treatment of hazardous substances and/or contaminated fluids above or below ground <p><i>Production</i></p> <p>(b) Proposals for oil and gas production, involving hydraulic fracturing, including extensions* to existing sites, will be permitted provided that:</p> <ul style="list-style-type: none"> (i) they accord with (a)(i-v) above; 	
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	<p>from the transport of oil/gas and water from the site;</p> <p>(iii) the restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24 whether or not oil or gas is found; and</p> <p><i>Activity beneath or proximate to designated areas</i></p> <p>(c) Proposals for exploration, appraisal and production of oil and gas, involving hydraulic fracturing, will be permitted underneath or in close proximity to the South Downs National Park, AONBs, Source Protection Zone 1 and Sites of Special Scientific Interest which demonstrate that special care will be taken to avoid harming the setting and/or special qualities and/or value of these designated areas.</p> <p>* including physical extensions or extensions to operations within the existing site boundary. N.B. The suitability of proposals for alterations to permitted operations will be considered against the Development Management policies.</p>	<p>(ii) no unacceptable impacts would arise from the transport, by vehicle or other means, of oil/gas, water, consumables, and wastes to or from the site;</p> <p>(iii) the restoration and aftercare of the site to a high quality standard would take place in accordance with Policy M24.</p> <p>(iv) No unacceptable impacts would arise from the on-site storage or treatment of hazardous substances and/or contaminated fluids above or below ground.</p> <p><i>Activity beneath or proximate to designated areas</i></p> <p>(c) Proposals for exploration, appraisal and production of oil and gas, involving hydraulic fracturing, will be permitted underneath or in close proximity to designated areas, assets and habitats¹¹⁷, which demonstrate that special care will be taken to avoid harming the setting and/or special qualities and/or value of these designated areas.</p> <p><i>Groundwater</i></p> <p>(d) There is a presumption against hydrocarbon development involving hydraulic fracturing in Groundwater Source Protection Zones 1, 2 and 3 unless it is demonstrated that there will be no unacceptable impacts on groundwater.</p>	
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¹¹⁷ Designated areas and habitats include all areas and habitats designated and protected by international and national legislation including South Downs National Park, AONBs, SSSIs, SAC, SPAs, Ramsar sites, NNRS, heritage assets, sites identified under the Nature Conservation Review (NCR) or Geological Conservation Review (GCR), LNRs, SNCIs and RIGS, Ancient Woodland, Conservation Areas, Scheduled Monuments, Registered Parks and Gardens of Special Historic Interest.

		* including physical extensions or extensions to operations within the existing site boundary. N.B. The suitability of proposals for alterations to permitted operations will be considered against the Development Management policies.	
Plant, processing and secondary activities	<p>Policy M8: Plant, processing and secondary activities</p> <p>Proposals for secondary mineral processing and /or ancillary activities such as concrete batching and blending will be permitted provided that:</p> <ul style="list-style-type: none"> (a) the proposed operations: <ul style="list-style-type: none"> (i) are linked to the existing operations on site; (ii) will remain ancillary to the principle development at the site; (iii) are of a duration that is tied to that of any primary extraction operation. (b) the overall restoration scheme and progressive restoration of the site is not unduly delayed or prolonged or in some other way jeopardised; 	<p>Policy M8: Mineral processing and ancillary activities at mineral sites</p> <p>Proposals for secondary mineral processing and /or ancillary activities will be permitted provided that:</p> <ul style="list-style-type: none"> (a) the proposed operations: <ul style="list-style-type: none"> (i) are linked to the existing operations on site; (ii) will remain ancillary to the principal development at the site; (iii) are of a duration that is tied to that of any primary extraction operation. (b) the overall restoration scheme and progressive restoration of the site is not unduly delayed or prolonged or in some other way jeopardised. 	<p>Changes made to clarify that this policy is concerned with managing development associated with non-extraction mineral supply activity that is linked to the main extraction activity. This clarity is needed as other mineral processing activities, such as concrete batching and blending, are akin to general heavy and light industrial activities, the development of which is better controlled through district and borough local plans.</p>
Mineral Resource Safeguarding	<p>Policy M9: Safeguarding Minerals</p> <ul style="list-style-type: none"> (a) Existing minerals extraction sites will be safeguarded against non-mineral development that prejudices their ability to supply minerals in the manner associated with the permitted activities. (b) Sand and gravel, brick-making clay and building stone resources and chalk reserves are 	<p>Policy M9: Safeguarding Minerals</p> <ul style="list-style-type: none"> (a) Existing minerals extraction sites¹¹⁸ will be safeguarded against non-mineral development that prejudices their ability to supply minerals in the manner associated with the permitted activities. (b) Sand and gravel, brick-making clay, building stone resources and chalk reserves¹¹⁹ are 	<p>Changes made for purposes of clarification and so help ensure effectiveness. The outcomes envisaged by the original text of the policy have not changed.</p> <p>Change to clause (b) (iii) clarifies that prior extraction of mineral should still be considered even if there is</p>

¹¹⁸ The existing minerals extraction sites which are safeguarded by Policy M9 are listed in the Annual Monitoring Report

¹¹⁹ Chalk reserves specified in the Annual Monitoring Report will be safeguarded.

	<p>safeguarded against sterilisation. Proposals for non-mineral development within the Minerals Safeguarded Areas will be permitted provided that:</p> <ul style="list-style-type: none"> (i) Mineral sterilisation will not occur; or (ii) it is appropriate and practicable to extract the mineral prior to the development taking place, having regards to the other policies in this Plan; or (iii) the overriding need for the development outweighs the safeguarding of the mineral. 	<p>safeguarded against sterilisation. Proposals for non-mineral development within the Minerals Safeguarded Areas will not be permitted unless:</p> <ul style="list-style-type: none"> (i) Mineral sterilisation will not occur; or (ii) it is appropriate and practicable to extract the mineral prior to the development taking place, having regards to the other policies in this Plan; or (iii) the overriding need for the development outweighs the safeguarding of the mineral and it has been demonstrated that prior extraction is not practicable or environmentally feasible. 	<p>an overriding need for the non-mineral development.</p>
Minerals Infrastructure Safeguarding	<p>Policy M10: Safeguarding Minerals Infrastructure</p> <ul style="list-style-type: none"> (a) Development on, or near to, sites hosting existing minerals infrastructure that would prevent or prejudice the use of existing minerals infrastructure will not be permitted unless: <ul style="list-style-type: none"> (i) the site or infrastructure is no longer suitable for continued minerals use; or (ii) redevelopment of the site or loss of the infrastructure would form part of a strategy or scheme that has wider social and/or economic benefits that clearly outweigh the retention of the site or the infrastructure for minerals use; and, (iii) a suitable replacement site or infrastructure has been identified and permitted; (b) Where safeguarded infrastructure is situated within a host quarry, wharf or rail depot facility, 	<p>Policy M10: Safeguarding Minerals Infrastructure</p> <ul style="list-style-type: none"> (a) Development on, or near to, sites hosting permanent minerals infrastructure, that would prevent or prejudice its operation will not be permitted unless: <ul style="list-style-type: none"> (i) the site or infrastructure is no longer suitable for continued minerals use; or (ii) redevelopment of the site or loss of the infrastructure would form part of a strategy or scheme that has wider social and/or economic benefits that clearly outweigh the retention of the site or the infrastructure for minerals use; and, (iii) a suitable replacement site or infrastructure has been identified and is available; (b) Where safeguarded infrastructure is situated within a host quarry, wharf or rail depot facility, it is safeguarded for the life of the host site. (c) The following permanent wharves and railheads are safeguarded for the purposes of mineral 	<p>Safeguarding of temporary wharves at Shoreham included to ensure consistency with NPPF which requires that existing infrastructure be safeguarded regardless of whether it is temporary or not. (Note this approach was considered within Option W4 during preparation of Draft MLP in 2015, as noted in Table A4.1 above).</p>

	<p>it is safeguarded for the life of the host site.</p> <p>(c) The following wharves and railheads are safeguarded:</p> <ul style="list-style-type: none"> (i) ARC Wharf, Shoreham (inset map 3) (ii) Turberville and Penneys Wharf, Shoreham (inset map 3) (iii) Halls Wharf, Shoreham (inset map 3) (iv) Rhombus Wharf, Shoreham (inset map 3) (v) Railway Wharf, Littlehampton (inset map 4) (vi) Chichester Railway Sidings (inset map 5) (vii) Ardingly Rail Depot (inset map 6) (viii) Tinsley Goods Yard, Crawley (inset map 7) (ix) Crawley Goods Yard (inset map 7) (x) Crawley Goods Yard (inset map 7) 	<p>transportation :</p> <ul style="list-style-type: none"> (i) ARC Wharf, Shoreham (inset map 3) (ii) Turberville and Penneys Wharf, Shoreham (inset map 3) (iii) Halls Wharf, Shoreham (inset map 3) (iv) Rombus Wharf, Shoreham¹²⁰ (inset map 3) (v) Railway Wharf, Littlehampton (inset map 4) (vi) Chichester Railway Sidings (inset map 5) (vii) Ardingly Rail Depot (inset map 6) (viii) Tinsley Goods Yard, Crawley (inset map 7) (ix) Crawley Goods Yard (inset map 7) (x) Crawley Goods Yard (inset map 7) <p>(d) Development on, or near to, sites hosting temporary minerals infrastructure, that would prevent or prejudice its operation, will not be permitted, for the duration of the temporary permission, unless:</p> <ul style="list-style-type: none"> (i) the site or infrastructure is no longer suitable for continued minerals use; or (ii) redevelopment of the site or loss of the infrastructure would form part of a strategy or scheme that has wider social and/or economic benefits that clearly outweigh the retention of the site or the infrastructure for minerals use; <p>(e) The following temporary wharves are safeguarded for minerals transportation purposes:</p> <ul style="list-style-type: none"> (i) Kingston Railway Wharf (inset map xx) (ii) New Wharf (inset map xx) 	
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¹²⁰ Rombus wharf is safeguarded for its potential to import minerals in future.

Strategic Mineral Sites – Site Options/Allocations

Sites	<p>Policy M11: Strategic Minerals Site Allocations</p> <p>(a) The following site is allocated for soft sand extraction and is acceptable, in principle, for that purpose:</p> <ul style="list-style-type: none"> Ham Farm, Steyning (Inset Map M.HO.4) <p>(b) The following site is allocated for the extraction of clay for brick making and is acceptable, in principle, for that purpose:</p> <ul style="list-style-type: none"> Extension to West Hoathly Brickworks (Inset Map M.MS.1) <p>(c) The development of a site allocated under (a)-(b) must take place in accordance with the policies of this Plan and satisfactorily address the 'development principles' for that site identified in the supporting text to this policy.</p> <p>(d) The sites allocated under (a)-(b) will be safeguarded from any development either on or adjoining the sites that would prevent or prejudice the development of their allocated waste management use or uses.</p>	<p>Policy M11: Strategic Minerals Site Allocations</p> <p>(a) The following site is allocated for soft sand extraction and is acceptable, in principle, for that purpose:</p> <ul style="list-style-type: none"> Ham Farm, Steyning (Inset Map 1) <p>(b) The following site is allocated for the extraction of clay for brick making and is acceptable, in principle, for that purpose:</p> <ul style="list-style-type: none"> Extension to West Hoathly Brickworks (Inset Map 2) <p>(c) The development of a site allocated under (a)-(b) must take place in accordance with the policies of this Plan and satisfactorily address the 'development principles' for that site identified in the supporting text to this policy.</p> <p>(d) The sites allocated under (a)-(b) will be safeguarded from any development either on or adjoining the sites that would prevent or prejudice the development of their allocated minerals use or uses.</p>	<p>Changes made to development principles at both sites to ensure that proposals adequately address issues which need to be overcome in order that development can take place without causing unacceptable impacts.</p>
Development Management Policies			
Character	<p>Policy M12: Character</p> <p>Proposals for mineral development will be permitted provided:</p> <p>a) they would not have an unacceptable impact on the character, distinctiveness, sense of place of the different areas of the County and the special qualities of the National Park and AONBs and their settings;</p> <p>b) they would not have an unacceptable impact on the</p>	<p>Policy M12: Character</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>a) they would not have an unacceptable impact on the character, distinctiveness, sense of place of the different areas of the County, the special qualities of the South Downs National Park, and the setting and character of the Chichester Harbour and High Weald Areas of Outstanding Natural Beauty and the setting of protected landscapes;</p>	<p>No change</p>

	<p>separate identity of settlements and distinctive character of towns and villages (including specific areas or neighbourhoods) and development would not lead to their actual or perceived coalescence;</p> <p>c) they reflect and, where possible, reinforce the distinctive attributes of the main character areas (including the retention of important features or characteristics).</p>	<p>b) they would not have an unacceptable impact on the separate identity of settlements and distinctive character of towns and villages (including specific areas or neighbourhoods) and development would not lead to their actual or perceived coalescence; and</p> <p>c) they reflect and, where possible, reinforce the distinctive attributes of the main character areas (including the retention of important features or characteristics).</p>	
Landscape	<p>Policy M13: Landscape</p> <p>a) Proposals for mineral development within protected landscapes (the South Downs National Park, the Chichester Harbour Area of Outstanding Natural Beauty (AONB), and the High Weald AONB) will not be permitted unless:</p> <p>iv. the site is allocated for that purpose in the adopted plan; or</p> <p>v. the proposal is for a small-scale development¹²¹ to meet local needs that can be accommodated without undermining the objectives of the designation; or</p> <p>vi. the proposal is for major mineral development that accords with part (c) of this Policy.</p> <p>(d) Proposals for mineral development located outside protected landscapes will be permitted provided that they do not undermine the objectives of the designation</p>	<p>Policy M13: Protected Landscape</p> <p>(a) Proposals for mineral development within protected landscapes (the South Downs National Park, the Chichester Harbour Area of Outstanding Natural Beauty, and the High Weald Area of Outstanding Natural Beauty) will not be permitted unless:</p> <p>i. the site is allocated for that purpose in the adopted plan; or</p> <p>ii. the proposal is for a small-scale development to meet local needs that can be accommodated without undermining the objectives of the designation; or</p> <p>iii. the proposal is for major mineral development that accords with part (c) of this Policy.</p>	<p>Changes have been made to make the policy clearer and so ensure its effectiveness. The original outcomes anticipated by the original wording of the policy have not changed.</p>

¹²¹ Small scale development can be defined as any development that is not major development for the purposes of paragraph 116 of the NPPF. i.e. development which does **not** have the potential to cause a significant adverse impact by reason of its scale, character or nature on the natural beauty, wildlife, cultural heritage and recreational opportunities of the SDNP or AONBs. Examples of small scale development include: ancillary developments such as weighbridges, offices, haul roads and other minor amendments.

	<p>(e) Proposals for mineral development within protected landscapes will not be permitted unless there are exceptional circumstances and that it is in the public interest as informed by an assessment of:</p> <ul style="list-style-type: none"> i. the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; ii. the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for the mineral in some other way; and iii. any detrimental impact on the environment, landscape, and recreational opportunities, and the extent to which identified impacts can be satisfactorily mitigated. 	<p>(b) Proposals for mineral development located outside protected landscapes will be permitted provided that they do not undermine the objectives of the designation.</p> <p>(c) Proposals for major mineral development within protected landscapes will not be permitted unless there are exceptional circumstances and where it is in the public interest as informed by an assessment of:</p> <ul style="list-style-type: none"> i. the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy; ii. the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for the mineral in some other way ; and iii. any potential detrimental impact on the environment, landscape, and recreational opportunities, and the extent to which identified impacts can be satisfactorily mitigated. 	
Historic Environment	<p>Policy M14: Historic Environment</p> <p>Proposals for minerals development will be permitted provided that:</p> <ul style="list-style-type: none"> (a) known features of historic or archaeological importance are conserved and, where possible, enhanced unless there are no alternative solutions and there are overriding reasons which outweigh the need to safeguard the value of sites or features; (b) they would not adversely affect currently 	<p>Policy M14: Historic Environment</p> <p>Proposals for minerals development will be permitted provided that:</p> <ul style="list-style-type: none"> (a) known features of historic or archaeological importance are conserved and, where possible, enhanced unless there are no alternative solutions and there are overriding reasons which outweigh the need to safeguard the value of sites or features; (b) they would not adversely affect currently unknown heritage assets with significant 	No change

	<p>unknown heritage assets with significant archaeological interest; and</p> <p>(c) where appropriate, the further investigation and recording of any heritage assets to be lost (in whole or in part) is undertaken and the results made publicly available.</p>	<p>archaeological interest; and</p> <p>(c) where appropriate, the further investigation and recording of any heritage assets to be lost (in whole or in part) is undertaken and the results made publicly available.</p>	
Air and Soil Quality	<p>Policy M15: Air and Soil</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) there are no unacceptable impacts on the intrinsic quality of, and where appropriate the quantity of, air and soil;</p> <p>(b) there are no unacceptable impacts on the management and protection of such resources, including any unacceptable impacts on Air Quality Management Areas; and</p> <p>(c) they are not located in areas subject to land instability, unless problems can be satisfactorily resolved, or are undertaken in a manner which could give rise to instability in future</p>	<p>Policy M15: Air and Soil</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) there are no unacceptable impacts on the intrinsic quality of, and where appropriate the quantity of, air and soil;</p> <p>(b) there are no unacceptable impacts on the management and protection of such resources, including any unacceptable impacts on Air Quality Management Areas; and</p> <p>(c) they are not located in areas subject to land instability, unless problems can be satisfactorily resolved, or are undertaken in a manner which could give rise to instability in future.</p>	No change
Water	<p>Policy 16: Water Resources</p> <p>Proposals for mineral development will be permitted provided that they would:</p> <p>(a) not cause unacceptable risk to the quality and quantity of surface water and groundwater (including reservoirs);</p> <p>(b) not cause changes to groundwater and surface water levels which would result in unacceptable</p>	<p>Policy 16: Water Resources</p> <p>Proposals for mineral development will be permitted provided that they would:</p> <p>(a) not cause unacceptable risk to the quality and quantity of water resources¹²²;</p> <p>(b) not cause changes to groundwater and surface water levels which would result in unacceptable impacts on:</p>	<p>Changes have been made to make the policy clearer and so ensure its effectiveness. The original outcomes anticipated by the original wording of the policy have are not changed.</p>

¹²² including ground, surface, transitional, and coastal waters

	<p>adverse impacts on</p> <ul style="list-style-type: none"> (i) adjoining land; (ii) the quality of groundwater resources or potential groundwater resources; and (iii) the potential yield of groundwater resources, river flows or natural habitats such as wetlands or heaths; <p>(c) protect and where possible enhance, the quality of rivers and other watercourses and water bodies (including within built-up areas);</p> <p>Work beneath the water-table will not be permitted unless there is a comprehensive groundwater management scheme agreed for the construction, operation and restoration of the proposal.</p>	<ul style="list-style-type: none"> (i) adjoining land; (ii) the quality of groundwater resources or potential groundwater resources; and (iii) the potential yield of groundwater resources, river flows or natural habitats such as wetlands or heaths; and <p>(c) protect and where possible enhance, the quality of rivers and other watercourses and water bodies (including within built-up areas).</p>	
Biodiversity and Geodiversity	<p>Policy M17: Biodiversity and Geodiversity</p> <p>Proposals for minerals development will be permitted provided that:</p> <ul style="list-style-type: none"> (a) The development will: <ul style="list-style-type: none"> iv. avoid significant harm to wildlife species and habitats; or v. where significant harm cannot be wholly or partially avoided, ensure that the harm is can be effectively mitigated or; vi. as a last resort, where there is still significant residual harm, ensure proper compensation for that harm; (b) there are no adverse impacts on areas or sites of international or national biodiversity or geological conservation importance unless the benefits of the development clearly outweigh both the impact on the objectives of the designation, and on the wider network of such designated areas or sites; (c) there are no adverse impacts on areas, sites or 	<p>Policy M17: Biodiversity and Geodiversity</p> <p>Proposals for minerals development will be permitted provided that:</p> <ul style="list-style-type: none"> (a) The development will: <ul style="list-style-type: none"> i. avoid significant harm to wildlife species and habitats; or ii. where significant harm cannot be wholly or partially avoided, ensure that the harm is effectively mitigated or; iii. as a last resort, where there is still significant residual harm, ensure suitable compensation for that harm; (b) there are no unacceptable impacts on areas or sites of international or national biodiversity or geological conservation importance unless the benefits of the development clearly outweigh both the impact on the objectives of the designation, and on the wider network of such designated areas or sites; 	<p>Changes have been made to make the policy clearer and so ensure its effectiveness. The original outcomes anticipated by the original wording of the policy have not changed.</p>

	<p>features of regional or local biodiversity or geological conservation importance unless the benefits of the development clearly outweigh the impact on the objectives of the designation;</p> <p>(d) where appropriate, the creation, enhancement, and management of habitats, ecological networks, geodiversity and ecosystem services shall be secured consistent with wider environmental objectives, including Biodiversity Opportunity Areas and the South Downs Way Ahead Nature Improvement Area; and</p> <p>(e) where necessary, the investigation, evaluation, and recording of important sites and features is undertaken and, where appropriate, representative features are preserved.</p>	<p>(c) there are no unacceptable impacts on areas, sites or features of regional or local biodiversity or geological conservation importance unless the benefits of the development clearly outweigh the impact on the objectives of the designation;</p> <p>(d) where appropriate, the creation, enhancement, and management of habitats, ecological networks, geodiversity and ecosystem services shall be secured consistent with wider environmental objectives, including Biodiversity Opportunity Areas and the South Downs Way Ahead Nature Improvement Area; and</p> <p>(e) where necessary, the investigation, evaluation, and recording of important sites and features is undertaken and, where appropriate, representative features are preserved.</p>	
Public Amenity and Health	<p>Policy M18: Public Health and Amenity</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity¹²³;</p> <p>(b) the routes and amenity of public rights of way are safeguarded, or where temporary or permanent re-routeing can be justified, replacement routes of comparable or enhanced amenity value are provided.</p>	<p>Policy M18: Public Health and Amenity</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity¹²⁴; and</p> <p>(b) the routes and amenity of public rights of way are safeguarded, or where temporary or permanent re-routeing can be justified, replacement routes of comparable or enhanced amenity value are provided.</p>	No change

¹²³ Amenity includes that provided by the South Downs National Park as a potential International Dark Skies Reserve

¹²⁴ Amenity includes that provided by the South Downs National Park as a potential International Dark Skies Reserve

Flooding	<p>Policy M19: Flood Risk Management</p> <p>(a) Proposals for mineral development will be permitted provided that:</p> <ul style="list-style-type: none"> (i) mitigation measures are provided to an appropriate standard so that there would not be an increased risk of flooding on the site or elsewhere throughout the life of the quarry including its restoration and aftercare; (ii) they are compatible with Shoreline Management Plans and/or Catchment Flood Management Plans and the integrity of functional floodplains is maintained; (iii) appropriate measures are used to manage surface water run-off including, where appropriate, the use of sustainable drainage systems (SUDS); and (iv) they would not have an unacceptable impact on the integrity of sea, tidal, or fluvial flood defences, or impede access for future maintenance and improvements of such defences. 	<p>Policy M19: Flood Risk Management</p> <p>(a) Proposals for mineral development will be permitted provided that:</p> <ul style="list-style-type: none"> (i) mitigation measures are provided to an appropriate standard so that there would not be an increased risk of flooding on the site or elsewhere for the life of the development including any restoration and aftercare; (ii) they are compatible with Shoreline Management Plans and/or Catchment Flood Management Plans and the integrity of functional floodplains is maintained; (iii) appropriate measures are used to manage surface water run-off including, where appropriate, the use of sustainable drainage systems (SUDS); (iv) they would not have an unacceptable impact on the integrity of sea, tidal, or fluvial flood defences, or impede access for future maintenance and improvements of such defences. <p>(b) Proposals for minerals development in 'areas at risk of flooding' will not be permitted unless they pass the Sequential Test and, where applicable, the Exception Test set out in national policy.</p>	No change
Transport	<p>Policy M20: Transport</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) where practicable and viable, the proposal</p>	<p>Policy M20: Transport</p> <p>Proposals for mineral development will be permitted provided that:</p> <p>(a) where practicable and viable, the proposal</p>	Changes have been made to make the policy clearer and so ensure its effectiveness. The original outcomes

	<p>makes use of rail or water for the transportation of materials to and from the site;</p> <p>(b) transport links are adequate to serve the development or can be improved to an appropriate standard without an unacceptable impact on amenity, character, or the environment; and</p> <p>(c) where the need for road transport is demonstrated:</p> <p>(i) materials are capable of being transported using the Lorry Route network with minimal use of local roads, unless special justification can be shown;</p> <p>(ii) vehicle movements associated with the development will not have an unacceptable impact on the capacity of the highway network;</p> <p>(iii) there is safe and adequate means of access to the highway network and vehicle movements associated with the development will not have a severe impact on the safety of all road users;</p> <p>(iv) satisfactory provision is made for vehicle turning and parking, manoeuvring, loading, and, where appropriate, wheel cleaning facilities; and</p> <p>(v) vehicle movements are minimised by the optimal use of the vehicle fleet.</p>	<p>makes use of rail or water for the transportation of materials to and from the site;</p> <p>(b) transport links are adequate to serve the development or can be improved to an appropriate standard without an unacceptable impact on amenity, character, or the environment; and</p> <p>(c) where the need for road transport is demonstrated:</p> <p>(i) materials are capable of being transported using the Lorry Route network with minimal use of local roads, unless special justification can be shown;</p> <p>(ii) vehicle movements associated with the development will not have an unacceptable impact on the capacity of the highway network;</p> <p>(iii) there is safe and adequate means of access to the highway network and vehicle movements associated with the development will not have an unacceptable impact on the safety of all road users;</p> <p>(iv) satisfactory provision is made for vehicle turning and parking, manoeuvring, loading, and, where appropriate, wheel cleaning facilities; and</p> <p>(v) vehicle movements are minimised by the optimal use of the vehicle fleet.</p>	<p>anticipated by the original wording of the policy have not changed.</p>
Aerodrome Safeguarding	<p>Policy M21: Aerodrome Safeguarding</p> <p>Proposals for minerals development will be permitted</p>	<p>Policy M21: Aerodrome Safeguarding</p> <p>Proposals for minerals development will be permitted</p>	No change

	provided that they will not adversely affect the operational integrity or safety of aviation facilities.	provided that they will not adversely affect the operational integrity or safety of aviation facilities.	
Cumulative Impact	<p>Policy M22: Cumulative Impact</p> <p>Proposals for minerals development, including the intensification of use will be permitted provided that an unreasonable level of disturbance to the environment and/or to residents, businesses and visitors will not result from minerals development either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. Planning conditions may be used to co-ordinate working, thereby reducing the cumulative impact.</p>	<p>Policy M22: Cumulative Impact</p> <p>Proposals for minerals development, including the intensification of use, will be permitted provided that an unreasonable level of disturbance to the environment and/or to residents, businesses and visitors will not result from minerals development either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. Planning conditions may be used to co-ordinate working, thereby reducing the cumulative impact.</p>	No change
Design and Operation of Mineral Developments	<p>Policy M23: Design and Operation of Mineral Developments</p> <p>Proposals for minerals development will be permitted provided that, where appropriate, the scale, form, and layout (including landscaping) take into account the need to:</p> <p>(a) integrate with and, where possible, enhance adjoining land-uses and minimise potential conflicts between land-uses and activities;</p> <p>(b) have regard to the local context including:</p> <ul style="list-style-type: none"> (i) the varied traditions and character of the different parts of West Sussex and the South Downs National Park (ii) the characteristics of the site in terms of topography, and natural and man-made features; (iii) the topography, landscape, townscape, streetscape and skyline of the surrounding 	<p>Policy M23: Design and Operation of Mineral Developments</p> <p>Proposals for minerals development, including ancillary development, will be permitted provided that, where appropriate, the scale, form, and layout (including landscaping) take into account the need to:</p> <p>(a) integrate with and, where possible, enhance adjoining land-uses and minimise potential conflicts between land-uses and activities;</p> <p>(b) have regard to the local context including:</p> <ul style="list-style-type: none"> (i) the varied traditions and character of the different parts of West Sussex and the South Downs National Park; (ii) the characteristics of the site in terms of topography, and natural and man-made features; (iii) the topography, landscape, townscape, streetscape and skyline of the surrounding 	<p>Text added to clarify that this policy also applies to proposals for ancillary development which form a separate proposal which is made separately to, but to support, the main mineral supply activity.</p> <p>Text added to clarify how proposals for the extension of time will be considered.</p> <p>Both changes are made to ensure the effectiveness of the Plan.</p>

	<p>area;</p> <p>(iv) views into and out of the site;</p> <p>(c) include measures to:</p> <p>(i) maximise water and energy efficiency</p> <p>(ii) avoid or at least minimise greenhouse gas emissions,</p> <p>(iii) minimise the use of non-renewable energy, and maximise the use of lower-carbon energy generation (including heat recovery and the recovery of energy from gas); and</p> <p>(iv) ensure resilience and enable adaptation to a changing climate.</p>	<p>area;</p> <p>(iv) views into and out of the site;</p> <p>(c) include measures to:</p> <p>(i) maximise water and energy efficiency;</p> <p>(ii) avoid or at least minimise greenhouse gas emissions,</p> <p>(iii) minimise the use of non-renewable energy, and maximise the use of lower-carbon energy generation (including heat recovery and the recovery of energy from gas); and</p> <p>(iv) ensure resilience and enable adaptation to a changing climate.</p> <p>Proposals to vary conditions of existing consents to extend the time limit for working and/or final restoration of sites should demonstrate the need for the development and its acceptability in terms of the other relevant policies of this Plan.</p>	
Restoration	<p>Policy M24: Restoration and Aftercare</p> <p>Proposals for mineral extraction and temporary minerals infrastructure development will be permitted provided that they are accompanied by comprehensive schemes that:</p> <p>(g) ensure that that land is restored at the earliest opportunity including, where appropriate, by phased, or progressive restoration;</p> <p>(h) make provision for high quality and practicable restoration, management, and aftercare;</p> <p>(i) are appropriate to their locations, maximising benefits taking into account local landscape</p>	<p>Policy M24: Restoration and Aftercare</p> <p>Proposals for mineral extraction and temporary minerals infrastructure development will be permitted provided that they are accompanied by comprehensive restoration and aftercare schemes that:</p> <p>(a) ensure that land is restored at the earliest opportunity including, where appropriate, by phased, or progressive restoration;</p> <p>(b) make provision for high quality and practicable restoration, management, and aftercare;</p> <p>(c) are appropriate to their locations, maximising benefits taking into account local landscape</p>	<p>Changes have been made to make the policy clearer and so ensure its effectiveness. The original outcomes anticipated by the original wording of the policy have not changed.</p>

	<p>character, the historic environment, biodiversity gain, priority habitat conservation and wider environmental objectives;</p> <p>(j) where appropriate, re-instate, and/or re-route, and where possible, improve of public rights of way and maximise public amenity benefits; and</p> <p>(k) provide for the removal of all buildings, machinery and plant when no longer required in connection with the principal use unless their removal conflicts with the agreed restoration scheme;</p> <p>(l) ensure that soil resources are retained, conserved and handled appropriately during operations and restoration;</p> <p>(m) preserve, maintain and where appropriate, manage, hydrogeological and hydrological conditions to prevent adverse impacts on groundwater conditions or increased flood risk onsite or elsewhere.</p>	<p>character, the historic environment, biodiversity gain, priority habitat creation, and wider environmental objectives;</p> <p>(d) where appropriate, re-instate, and/or re-route, and where possible, improve public rights of way and maximise public amenity benefits;</p> <p>(e) provide for the removal of all buildings, machinery and plant when no longer required in connection with the principal use unless their removal conflicts with the agreed restoration scheme;</p> <p>(f) ensure that soil resources are retained, conserved and handled appropriately during operations and restoration;</p> <p>(g) preserve, maintain and where appropriate, manage, hydrogeological and hydrological conditions to prevent unacceptable impacts on groundwater conditions or increased flood risk.</p>	
Community benefits and engagement	<p>Policy M25: Community and Engagement</p> <p>Proposals for minerals development will be permitted provided that, where necessary, a site liaison group is established by the operator to address issues arising from the operation of a minerals development or facility.</p>	<p>Policy M25: Community and Engagement</p> <p>Proposals for minerals development will be permitted provided that, where necessary, a site liaison group is established by the operator to address issues arising from the operation of a minerals development or facility.</p>	No change
Secondary and Recycled Aggregate	<p>Policy M26: Maximising the use of Secondary and Recycled Aggregates</p> <p>Proposals for development will be permitted provided that opportunities for the use of secondary and recycled aggregates, and building products made from</p>	<p>Policy M26: Maximising the use of Secondary and Recycled Aggregates</p> <p>Proposals for development will be permitted provided that opportunities for the use of secondary and recycled aggregates, and building products made from</p>	No change

	secondary aggregates and recycled are maximised.	secondary and recycled aggregates are maximised.	
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Table A4.3: SA Framework and Assumptions for judging significance of effects of the West Sussex Minerals Local Plan Site Options (taken from Appendix 2 of Jan 2015 Scoping Report and updated to reflect technical assessment methodologies for SFRA, HRA, Landscape Assessment and Transport Assessment, and additional comments from WSCC and SDNPA)

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
Social			
<p>1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Have harmful effects on human health and be sited close to sensitive receptor(s)? ○ Affect amenity through dust and noise (e.g. through blasting/traffic) or vibration? ○ Affect road safety? ○ Have the potential to create land use conflict issues? ○ Provide opportunities for improvements to health, 		<p>Background information affecting assumptions</p> <p>Some minerals sites could have a minor negative effect on protecting the health of local residents, communities and visitors to the County. Dust¹²⁵ 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. However, research undertaken for the government in 1995¹²⁶ excluded any health effects of dust generated by surface mineral operations (i.e. sand and gravel extraction and crushed rock quarries, as opposed to underground mines). Therefore, it is not considered likely that mineral extraction in West Sussex would give rise to a significant negative effect on health, but minor negative effects may be experienced or perceived by some residents' etc. living or working close to sites.</p> <p>National Planning Practice Guidance for Minerals¹²⁷ states that the relationship of the activities within mineral workings to surrounding land uses, in regards to dust emissions, will vary from site to site. Since the nature of those land uses varies, so will their sensitivity to dust. Additional measures to control fine particles (PM₁₀) to address any impacts of dust might be necessary if, within a site, the actual source of emission (e.g. haul roads, crushers etc.) is in close proximity to a residential property or other sensitive use. Evidence included in the former Annex I: Dust of Minerals Policy Statement 2, and National Planning Practice Guidance for Minerals state that residential properties and other sensitive uses can be affected by dust up to 1km from the source, and that additional measures to monitor and control PM₁₀ might be necessary. 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. Therefore these distances (100m and 1km) have been used within the assumptions for this SA objective.</p> <p>The NPPF is clear that minerals planning authorities should ensure that unavoidable dust emissions</p>	<p>Visual analysis of Ordnance Survey (OS) base maps for residential areas, hospitals and faith centres.</p> <p>WSCC data showing location of schools, location of existing minerals and waste sites, and allocated waste sites in the West Sussex Local Plan.</p> <p>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</p>

¹²⁵ 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 PM₁₀.

¹²⁶ Office of the Deputy Prime Minister (by Arup Environmental/Ove Arup and Partners). *The Environmental Effects of Dust from Surface Minerals Workings*, 1995.

¹²⁷ Available at: <http://planningguidance.planningportal.gov.uk/blog/guidance/minerals/assessing-environmental-impacts-from-minerals-extraction/dust-emissions/>.

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<p>wellbeing and amenity through enhancements?</p> <ul style="list-style-type: none"> ○ Create cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential? 		<p>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.</p> <p>Mineral sites could also 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. Potential impacts on amenity and safety of local residents associated with minerals transport have been considered under SA objective 13 below. 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. Evidence from Annex 2: Noise of Minerals Policy Statement 2 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. Furthermore, National Planning Practice Guidance for Minerals¹²⁸ states that activities such as soil-stripping, the construction and removal of baffle mounds, soil storage mounds and soil heaps, construction of new permanent landforms and aspects of site road construction and maintenance may give rise to particularly noisy short-term activities. However, increased temporary daytime noise limits should be considered to facilitate essential site preparation and restoration work, and construction of baffle mounds where it is clear that this will bring longer-term environmental benefits to the site or its environs. 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 such as the sites in WSCC.</p> <p>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 above.</p> <p>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.</p>	<p>to Adoption it is (the date and stage of each Local Plan will be referred to in the SA matrices).</p> <p>GIS analysis of a number of existing and potential mineral sites within 1km of existing settlement boundaries.</p> <p>Any relevant information from the WSCC site assessment process.</p>

¹²⁸ Accessible at: <http://planningguidance.planningportal.gov.uk/blog/guidance/minerals/assessing-environmental-impacts-from-minerals-extraction/noise-emissions/>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
		<p>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.</p> <p>There could be potential for land use conflict where minerals sites are in close proximity to areas planned for future residential development.</p> <p>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.</p> <p>Assumptions for determining significance of effects on SA objective 1:</p>	
	++	N/A	
	+	N/A	
	0	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> 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 <p>are considered unlikely to have effects on health and local amenity.</p> <p>Potential sites which are greater than 100m from an existing mineral or waste site, or an allocated waste site in the West Sussex Waste Local Plan are considered unlikely to have a cumulative effect on the local community.</p> <p>Potential mineral sites which are adjacent to or within 100m of an existing mineral or waste site, or an allocated waste site in the West Sussex Waste Local Plan but over 100m from sensitive receptors are considered unlikely to have a cumulative effect on the local community.</p> <p>Settlements with no new potential minerals sites within 1km are considered unlikely to experience cumulative effects from new mineral operations on the amenity of the local community.</p>	
	-?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> 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 	

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
		<p>are considered likely to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain (-?).</p> <p>In addition, potential sites which are:</p> <ul style="list-style-type: none"> • Within 1km from a settlement, and • There are other existing mineral or waste sites, or allocated waste sites in the West Sussex Waste Local Plan also within 1km of the same settlement <p>could have a cumulative effect on the amenity of the local community.</p>	
	--	N/A, as research has excluded any health effects of dust generated by surface minerals operations such as sand and gravel and crushed rock extraction, and research has highlighted that effects on amenity (e.g. noise) are improving and can be controlled, mitigated or removed.	
<p>2. To protect and, where possible, enhance recreation opportunities for all, including access to and enjoyment of the countryside, open spaces and Public Rights of Way (PROW).</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Be likely to affect the 		<p>Background information affecting assumptions</p> <p>All of the potential minerals sites could have negative effects on the amenity of users of Public Rights of Way (PROW), including long distance trails (e.g. South Downs Way, and the Serpent Trail), and other users of the countryside, open spaces and recreational facilities if they are in close proximity to the potential site, by making them less attractive for users or in some cases removing the access (e.g. PROW and cycle routes). This could therefore indirectly affect tourism in the County, particularly in the South Downs National Park. 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.</p> <p>There may be some opportunities for enhancement to footpaths/ PROW during development of particular mineral sites. In addition, there may be opportunities to create new recreation areas/open spaces during restoration of mineral sites.</p>	<p>GIS data from WSCC for PROW, plus analysis of OS base map for other types of leisure/recreational facilities and open spaces. Analysis of Sustrans Maps¹²⁹ will be completed for cycle routes.</p> <p>Any relevant information from the WSCC site</p>

¹²⁹ Available at: <http://www.sustrans.org.uk/ncn/map?gclid=CIWvqcnx47kCFTIQtAodzCMACQ>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<p>amenity of users on PRoW, recreation areas/open spaces or other users of the countryside in the area, or affect views and/or tranquillity of these areas?</p> <p>○ Provide restoration opportunities for recreation?</p>		Effects on the tranquillity of the area are considered under SA objective 5.	assessment process.
		Assumptions for determining significance of effects on SA objective 2:	
	++?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> Assessed as having an opportunity for major enhancement of PRoWs, including long distance trails, or other recreational facilities and/or additional routes to be constructed, as identified by WSCC/SDNPA in the site assessment process for the site <p>could have a significant positive effect on the amenity of users of PRoW and other users of the countryside in the County. However, if it is not possible for WSCC/SDNPA to identify opportunities for major enhancement and/or additional routes to be constructed through the site assessment process, it will not be possible to determine this effect until the planning application stage. Therefore, the positive effect is uncertain.</p>	
	+?	<p>Potential minerals sites which have no PRoW, including long distance trails, within the site or are:</p> <ul style="list-style-type: none"> Assessed by WSCC/SDNPA as having a PRoW network, including long distance trails, where there is an opportunity for the existing route to be enhanced. <p>could have a minor positive effect on the amenity of users of PRoW and other users of the countryside in the County. However, if it is not possible for WSCC/SDNPA to identify opportunities for enhancement through the site assessment process, it will not be possible to determine this until the planning application stage.</p> <p>The restoration of minerals sites is increasingly adopting innovative practice and this could have positive effects on providing recreation opportunities. 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. Therefore, the positive effect is uncertain.</p>	
	0	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> More than 250m from a leisure or recreational facility or open space, including PRoW and long distance trails, or Identified by WSCC/SDNPA in the site assessment process as being a PRoW, including long distance trails, but not requiring diversion or enhancement. <p>are considered unlikely to have an effect on the amenity of users of PRoW and other users of the countryside in the County.</p>	

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
	-	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none">• Within 250m of a leisure or recreational facility or open space, including PRoW and long distance trails, or• Identified by WSCC/SDNPA in the site assessment process as having an impact on the PRoW network, including long distance trails, with potential diversion required,• Within the SDNPA or AONBs <p>could have a minor negative effect on the amenity of users of PRoW and other users of the countryside in the County, or enjoyment of the National Park and AONBs by making the facilities/countryside less attractive for users and impacting on amenity.</p>	
	--	<p>Potential minerals sites which:</p> <ul style="list-style-type: none">• Include a leisure or recreational facility or open space, including PRoW and long distance trails, or• Are identified by WSCC/SDNPA in the site assessment process as having a major adverse impact on the network with potential closure required. <p>could have a significant negative effect on the amenity of users of PRoW and long distance trails, and other users of the countryside in the County, 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.</p>	
Economic			
<p>3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none">○ Help the local economy, for example by generating new jobs, and how might implementing the policy impact on local businesses?○ Encourage the provision of	<p>Background information affecting assumptions</p> <p>The <u>location</u> of mineral sites is unlikely to directly affect local businesses in West Sussex, as it is unlikely that new sites will encourage further investment and growth in the industry. Also, the <u>location</u> of mineral sites is unlikely to be the determining factor in directly affecting tourists’ decisions to visit an area, as this will be determined by individual views which will vary. Although, 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.</p> <p>Assumptions for determining significance of effects on SA objective 3:</p>		No data needed.
	++	N/A	

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<div>more locally based skills and facilities?</div> <div>o Affect tourists’ decisions to visit an area?</div> <div>o Compromise safe operating of commercial aerodromes (i.e. be near to an airfield and through restoration likely to attract large numbers of birds and increase the chance of bird strike)?</div>	+	All sites are considered likely to have a minor positive effect on increasing employment levels.	
	0	N/A	
	-?	<div>Potential minerals sites which are:</div> <div><div>• Within an aerodrome safeguarding area could have minor negative effects on the safe operating of commercial aerodromes/airports if restored to a water-based use that is likely to attract large numbers of birds and increase the risk of bird strike. 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.</div><div>•</div></div>	
	--	N/A	
<div>4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.</div> <div>Would the site/policy:</div> <div>o Reduce the extraction of virgin materials?</div> <div>o Avoid sterilising mineral resources by preventing unnecessary development on or near to mineral resources?</div> <div>o Require prior extraction if development that would sterilise mineral resources were to go ahead?</div>	<div>Background information affecting assumptions</div> <div>New potential mineral sites would not be inappropriate development as they are contributing to the extraction of mineral resources, not limiting the ability to extract resources, and would therefore have a positive effect on this objective, which primarily relates to conserving minerals resources from inappropriate non-minerals development. This is supported by designating resources as Mineral Safeguarding and Consultation areas to safeguard from sterilisation by <u>non-mineral</u> development.</div> <div>Assumptions for determining significance of effects on SA objective 4:</div> <div><div>++</div><div>N/A</div><div><div>+</div><div>New potential mineral sites are not classed as inappropriate development, however, these allocations would have a positive effect on this objective as they provide a degree of protection to minerals resources from inappropriate non-mineral development</div></div><div><div>0</div><div>N/A</div></div><div><div>-</div><div>N/A</div></div><div><div>--</div><div>N/A</div></div></div>		No data needed.

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
Environmental			
<p>5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Help enable the protection of landscape (particularly AONB and SDNP) and townscape character? ○ Contribute to the restoration of minerals sites, maximising after-use potential for beneficial use (e.g. agriculture, nature conservation, recreation, amenity, water storage, flood management) as appropriate? ○ Facilitate the supply and use of local building materials to protect local character? ○ Affect dark skies from light pollution? ○ Protect and enhance the 		<p>Background information affecting assumptions</p> <p>National Parks have statutory protection through the National Parks and Access to the Countryside Act (1949) and the Environment Act (1995). Areas of Outstanding Natural Beauty (AONB) have statutory protection through the Countryside and Rights of Way Act (2000). More than half the County has been designated for landscape conservation, including South Downs National Park, High Weald AONB and Chichester Harbour AONB, which are both partly within West Sussex. The SDNPA is also currently seeking Dark Skies Reserve status for the South Downs.</p> <p>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 in detail until the planning application stage, when specific proposals about what sort of extraction practices and mitigation measures might be implemented will be available, and judgements will depend upon factors such as: how prominent sites are in the landscape; the level of screening; and the character of the surrounding landscape.</p> <p>All minerals development would result in some level of noise and light pollution during site preparation, operations and potentially during restoration as well (noise impacts are covered under SA Objective 1). Light pollution would be more likely to affect dark skies during winter months when shorter day lengths mean extraction sites may still be operating when it is dark (e.g. late afternoon).</p> <p>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. This includes the potential for cumulative noise/light effects if more than one site is located within or near the National Park or AONBs.</p> <p>West Sussex County Council commissioned consultants to carry out a landscape sensitivity and capacity assessment of the potential mineral sites in the county to inform the preparation of the Minerals Local Plan¹³⁰. The original study was undertaken in 2011, and has been updated by the consultants in 2015 to take account of two new potential mineral extraction sites that are being considered, together with a proposed processing site, and to two sites which were assessed in 2011 but which have subsequently had their boundaries substantially altered. In addition, the South Downs National Park Authority has also reviewed the assessment of the ten potential mineral sites</p>	<p>GIS national datasets from Natural England's MAGIC database.</p> <p>Overall sensitivity and capacity judgements from the WSCC and SDNPA Landscape Capacity and Sensitivity studies.</p>

¹³⁰ West Sussex Landscape Sensitivity and Capacity Study for Potential Mineral and Waste Sites (LUC, October 2011); and the Minerals Addendum (LUC, May 2015).

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
tranquillity of West Sussex (e.g. by minimising noise arising from minerals facilities and transport)? o Encourage landscape improvement?		<p>lying within the National Park to take account of more up to date evidence (and any changes in boundary that have been proposed)¹³¹. The SDNPA Landscape Architect’s assessment was largely based on the methodology used by the consultants. In determining the landscape sensitivity of each potential mineral site, the consultants’ methodology considered a number of factors which contribute to landscape sensitivity, including: tranquillity (including noise and lighting); remoteness; views and landmarks; visual receptors; landscape designations; natural heritage; historic environment and settings and recreational use of the site. These factors reflect a number of the sub-objectives for SA objective 5, therefore, the Landscape Sensitivity Reports have been used to inform the SA judgement regarding potential effects on this SA objective. These factors also reflect key aspects of West Sussex’s Landscape that indirectly contribute to tourism in the area, therefore, using the landscape sensitivity reports to inform the SA judgment ensures that effects on tourism are considered in the SA. Where recommendations for type of restoration have been made in the Landscape Sensitivity Reports these will also be noted.</p> <p>Aggregate extraction sites are not likely to contribute to providing local building materials to protect local character (due to the nature and use of aggregates). However, building stone sites are likely to contribute to protecting the local character of West Sussex through the supply of local building materials, due to their methods of working and the traditional stones worked at these sites.</p> <p>Assumptions for determining significance of effects on SA objective 5:</p>	
	++	N/A	
	+?	<p>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.</p> <p>In addition, building stone extraction sites are likely to have a positive effect on this objective as they will contribute to protecting the local character of West Sussex through the supply of local building materials, due to their methods of working and the traditional stone worked at these sites.</p>	
	0	<p>Potential minerals sites which:</p> <ul style="list-style-type: none">Have an overall landscape sensitivity judgement of ‘low’ are considered unlikely to have an effect on designated landscapes, local landscape character or tranquillity.	
	-	<p>Potential minerals sites which:</p>	

¹³¹ Supplement to WSCC Sensitivity Study 2011 (SDNP Landscape Architect 2015).

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
		<ul style="list-style-type: none"> Have an overall landscape sensitivity judgement of 'medium' or 'low-medium' are considered likely to have a minor negative effect on designated landscapes, local landscape character or tranquillity. 	
	--	<p>Potential minerals sites which:</p> <ul style="list-style-type: none"> Have an overall landscape sensitivity judgement of 'high' or 'medium-high' could be more likely to have a significant negative effect on designated landscapes, local landscape character and/or tranquillity. 	
<p>6. To protect, conserve and enhance biodiversity including natural habitats and protected species.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> Have an adverse effect on biodiversity, including the protection of designated sites (e.g. Special Protection Areas, Special Areas of Conservation, Ramsars, Sites of Special Scientific Interest, National Nature Reserves and Ancient Woodland)? Have an adverse effect on locally designated sites which form part of a network of ecosystems? Have an adverse effect on wider habitat networks 		<p>Background information affecting assumptions</p> <p>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.</p> <p>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 (including BAP habitats). 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'.</p> <p>Operation of mineral extraction sites can have a number of different impacts on habitats and species either within the boundary of the extraction site or in proximity to the site. Physical loss or damage to habitats can occur within the boundary of the extraction site. Operations within the mineral extraction site that affect water levels and water courses (e.g. through dewatering, diverting water courses or creation of siltation ponds) can affect ground and surface waterbodies downstream of the site. There may also be potential for water pollution e.g. through addition of dust and silts to waterbodies or through accidental spills or run-off of oil from machinery for example.</p> <p>Species can be affected through disturbance such as from noise, light, vibration and human presence. Disturbance effects are generally more likely within or in close proximity to the extraction site. Light pollution would only affect nocturnal species (e.g. bats and some birds), and would be more likely during the winter months when shorter day lengths mean extraction sites may still be operating when it is dark (e.g. late afternoon). Noise and vibration arising from sand and gravel extraction within waterbodies could affect aquatic species, however, it should be possible to avoid or mitigate adverse impacts, for example by timing works to avoid critical periods (e.g. spawning or breeding periods), or preventing work from being undertaken at night to avoid disturbance to nocturnal species (e.g. otters).</p>	<p>GIS national datasets from Natural England's MAGIC database.</p> <p>Any relevant information from the WSCC site assessment process and HRA.</p>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<p>(including BAP habitats) and land used by protected species?</p> <ul style="list-style-type: none">○ Provide opportunities for enhancing biodiversity and achieving net gains as part of the development or restoration?		<p>It is difficult to assess the potential for significant effects on habitats and species when selecting sites for allocation in the Joint MLP, as this is a strategic decision-making stage, and the level of detailed understanding of presence of habitats and species on a site (e.g. through Phase 1 habitat surveys) is unavailable (as this would be undertaken at the planning application stage, potentially through a site-specific Environmental Impact Assessment (EIA)). In addition, detailed proposals about what sort of extraction practices and mitigation measures might be implemented will not be available until the planning application stage.</p> <p>Therefore, as an <u>indication</u> of the likelihood of significant negative effects, proximity of designated nature conservation sites to potential mineral sites has been used. As more detailed information from the Habitats Regulations Assessment¹³² is available in relation to potential effects on international nature conservation sites, this has also been drawn upon. Uncertainty will be attached to all effects on this SA objective as effects will very much depend on the design and operation of extraction activities as well as implementation of mitigation measures which would not be determined until planning applications come forward.</p> <p>Note that sites of geological interest are considered under SA Objective 7.</p> <p>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.</p> <p>Assumptions for determining significance of effects on SA objective 6:</p>	
	++?	N/A – unless significant biodiversity enhancement opportunities through restoration of the minerals extraction site are identified by WSCC in the site assessment process, it is not considered likely that significant positive effects would occur from minerals development at any of the sites. Any likelihood of this occurring would not be known until the planning application stage, when developers have a better understanding of the enhancement opportunities present as sites.	

¹³² West Sussex Joint Minerals Local Plan Habitats Regulations Assessment (Aecom, June 2015).

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
	+?	<p>Potential minerals sites for which:</p> <ul style="list-style-type: none"> The WSCC/SDNPA site assessment process considers the overall impact on biodiversity is potentially positive because there is unlikely to be any priority habitats or species affected, but good biodiversity enhancement opportunities may exist through restoration of the site <p>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. However, if it is not possible for WSCC/SDNPA to identify positive impacts on biodiversity or enhancement opportunities through the site assessment process, it will not be possible to determine this until the planning application stage.</p>	
	0	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> More than 1km from any national or local designated nature conservation site or BAP priority habitat and the Habitats Regulations Assessment concluded no significant effects are likely on international nature conservation sites <p>are considered unlikely to affect this objective.</p>	
	-?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> Between 250m and 1km of one or more national or local designated nature conservation sites or include BAP priority habitat and the Habitats Regulations Assessment concluded significant effects are likely on international nature conservation sites <p>are considered more likely to 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. If the Habitats Regulations Assessment was then able to rule out adverse effects on the integrity of the international sites through the Appropriate Assessment stage provided certain mitigation is provided this will be noted.</p>	
	--?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> Within 250m of one or more national or local designated nature conservation sites and/or the Habitats Regulations Assessment could not rule out adverse effects on integrity on international nature conservation sites <p>are considered more likely to 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.</p>	
<p>7. To protect and conserve geodiversity.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> Have an adverse effect on 		<p>Background information affecting assumptions</p> <p>National and locally important sites of geological/geomorphological interest (SSSIs or Local Geological Sites, formerly 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</p>	<p>The Local Geological Sites dataset provided by the Sussex Biodiversity Record Centre.</p>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<p>geodiversity, including the protection of geological features or sites (e.g. Sites of Special Scientific Interest, and Local Geological Sites, formerly RIGS)?</p> <ul style="list-style-type: none"> ○ Create new geological exposures of education interest? ○ Provide opportunities for geodiversity as part of the development or restoration? 		<p>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.</p> <p>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.</p> <p>Assumptions for determining significance of effects on SA objective 7:</p>	Any relevant information from the WSCC site assessment process.
	++	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	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> • More than 500m from a national site of geological interest (SSSI) or Local Geological Site <p>are considered unlikely to affect this objective.</p>	
	-?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> • Within 500m of a national site of geological interest (SSSI) or Local Geological Site <p>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.</p>	
	--?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> • Within the boundary of a national site of geological interest (SSSI) or Local Geological Site <p>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.</p>	
<p>8. To conserve, and where possible, enhance the historic environment.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Help enable the 		<p>Background information affecting assumptions</p> <p>Listed buildings have statutory protection through the Planning (Listed Buildings and Conservation Areas) Act 1990.</p> <p>The Ancient Monuments and Archaeological Areas Act (1979) protects monuments whose preservation is given priority over other land uses.</p>	<p>GIS national datasets from Natural England's MAGIC database.</p> <p>Historic Parksapes dataset and</p>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
conservation of features of archaeological and other historic interest in the county, such as conservation areas, listed buildings, scheduled ancient monuments and areas of archaeological potential?		<p>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.</p> <p>The development of minerals sites in proximity to heritage assets could have a negative effect on the setting of these assets. However, as with the landscape and biodiversity SA objectives above, it is difficult to predict the scale of potential negative effects when selecting sites for allocation in the Joint MLP, as this is a strategic decision-making stage, and the level of detailed understanding of the character and sensitivity of heritage assets is unavailable (as this would be undertaken at the planning application stage, potentially through a site-specific Environmental Impact Assessment (EIA)). Detailed proposals about what sort of extraction practices and mitigation measures might be implemented will not be available until the planning application stage.</p> <p>Therefore, as an <u>indication</u> of the likelihood of significant negative effects, proximity of heritage assets to potential mineral sites has been used. Where more detailed information from Authorities’ assessment is available this will be drawn upon, including the judgements regarding cultural heritage sensitivity in the Landscape Sensitivity and Capacity studies^{133 134}. Uncertainty will be attached to all effects on this SA objective as effects will very much depend on the design and operation of extraction activities as well as implementation of mitigation measures which would not be determined until planning applications come forward.</p>	<p>Conservation Areas from WSCC.</p> <p>Any relevant information from the WSCC site assessment process.</p>
		<p>Assumptions for determining significance of effects on SA objective 8:</p>	
	++	N/A	
	+	N/A	
	0	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none">• More than 1km from a Historic Park or Garden or Registered Battlefield• More than 1km from a Scheduled Ancient Monument or Listed Building• More than 1km from a Conservation Area, or• Have a cultural heritage sensitivity judgement of ‘low’ in the Landscape Sensitivity and Capacity studies <p>are considered unlikely to have an effect on these assets.</p>	

¹³³ West Sussex Landscape Sensitivity and Capacity Study for Potential Mineral and Waste Sites (LUC, October 2011); and the Minerals Addendum (LUC, May 2015).

¹³⁴ Supplement to WSCC Sensitivity Study 2011 (SDNP Landscape Architect 2015).

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
	-?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> • Within 1km of a Historic Park or Garden or Registered Battlefield • Within 1km of a Scheduled Ancient Monument or Listed Building • Within 1km of a Conservation Area, or • Have an cultural heritage sensitivity judgement of 'low-medium' or 'medium' in the Landscape Sensitivity and Capacity studies <p>are considered more likely to have a minor negative effect on these assets.</p> <p>In addition, where the WSCC/SDNPA site assessment notes some potential for impacts on historic environment there could also be a minor negative effect.</p> <p>These effects would be uncertain as a more detailed assessment would be required once proposals are known.</p>	
	--?	<p>Potential minerals sites which:</p> <ul style="list-style-type: none"> • Are within or adjacent to a Historic Park or Garden or Registered Battlefield • Have Listed Buildings or Scheduled Ancient Monuments present on site • Are located within or adjacent to a Conservation Area, or • Have an cultural heritage sensitivity judgement of 'medium-high' or 'high' in the Landscape Sensitivity and Capacity studies <p>are considered more likely to have a significant negative effect on these assets.</p> <p>In addition, where the WSCC/SDNPA site assessment notes some potential for impacts on historic environment there could also be a significant negative effect.</p> <p>These effects would be uncertain as a more detailed assessment would be required once proposals are known.</p>	
<p>9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile agricultural land.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Minimise the loss of the best and most versatile agricultural land? 	<p>Background information affecting assumptions</p> <p>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). In some instances, depending on the proposed restoration process agreed for sites, soils could be reused during restoration.</p> <p>Assumptions for determining significance of effects on SA objective 9:</p> <p>++</p>	<p>N/A</p>	<p>GIS national datasets from Natural England's MAGIC database.</p> <p>Any relevant information from the WSCC site assessment process.</p>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<ul style="list-style-type: none"> Improve the soil quality? 	+	N/A	
	0	Potential minerals sites which are: <ul style="list-style-type: none"> Not within grade 1, 2 or 3 agricultural land are considered unlikely to have an effect on protecting or enhancing soil/land quality.	
	-	Potential minerals sites which are: <ul style="list-style-type: none"> 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 3 BMV agricultural land could have a minor negative effect on protecting or enhancing soil/land quality.	
	--	Potential sites which are: <ul style="list-style-type: none"> 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.	
10. To reduce air pollution and to protect and, where possible, enhance air quality. Would the site/policy: <ul style="list-style-type: none"> Lead to a change in local air quality? Cause further deterioration of air quality in Air Quality Management Areas? Cause an increase in deposition of pollutants on sensitive designated nature conservation sites? 		Background information affecting assumptions 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, crushing and processing. 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. However, 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. However, it is recognised that the mineral sites in West Sussex are predominantly sand and gravel or clay operations. For certain quarry processes likely to produce dust, dust emissions are controlled under the Environmental Permitting (England and Wales) Regulations (2010) regulated and enforced by the Environment Agency. The requirement to meet Environmental permitting standards (including emissions to air) should ensure that the design and operation of minerals sites minimises any	Analysis of OS data, plus WSCC's list of AQMA locations and the West Sussex Lorry Route Network dataset. Any relevant information from the Minerals Local Plan Transport Assessment (Paul Basham Associates, November 2015) and HRA.

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
		<p>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.</p> <p>Air quality impacts on human sensitive receptors due to dust emissions from the sites themselves are already covered under the assumptions for SA Objective 1 above. The 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.</p> <p>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. Based on the Highways Agency Design Manual for Road and Bridges (DMRB) Volume 11, Section 3, Part 1¹³⁵ (which was produced to provide advice regarding the design, assessment and operation of trunk roads (including motorways)), a significant effect on air quality would only occur if the annual average daily traffic (AADT) heavy duty vehicle (HDV) flows along particular routes were likely to increase by 200 AADT or more. Therefore, the likely number of HDV movements resulting from an operational mineral site will need to be taken into account.</p> <p>In addition to the impacts on air quality for humans, air pollution is most likely to affect designated nature conservation sites where plant, soil and water habitats are the qualifying features, but some qualifying animal species may also be affected, either directly or indirectly, by any deterioration in habitat as a result of air pollution. Deposition of pollutants to the ground and vegetation can alter the characteristics of the soil, affecting the pH and nitrogen availability that can then affect plant health, productivity and species composition. In terms of vehicle traffic, nitrogen oxides (NO_x, i.e. NO and NO₂) are considered to be the key pollutants. Deposition of nitrogen compounds may lead to both soil and freshwater acidification, and NO_x can cause eutrophication of soils and water. Based on the DMRB Volume 11, Section 3, Part 1, it is assumed that air pollution from roads passing through</p>	

¹³⁵ *Design Manual for Road and Bridges*. Highways Agency. <http://dft.gov.uk/ha/standards/dmr/index.htm>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)								
		<p>or adjacent to designated nature conservation sites is unlikely to be significant beyond 200m from the road itself. As the specific routes that minerals transport take will not be known until planning applications come forward, the Highways Agency guideline measure of 200 metres from a road beyond which air pollution effects are unlikely to be significant will be applied to those roads likely to be used for minerals transport to and from potential mineral sites, i.e. the primary road network of motorways and A roads that form the West Sussex Lorry Route Network. However, a significant effect would only occur within 200m of the road if the AADT heavy duty vehicle flows along that route were likely to increase by 200 AADT or more. Therefore, the likely number of HDV movements resulting from an operational mineral site will also need to be taken into account. This information has been identified through the Transport Assessment.</p> <p>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 13 below.</p> <p>Assumptions for determining significance of effects on SA objective 10:</p> <table><tr><td>++</td><td>N/A</td></tr><tr><td>+</td><td>N/A</td></tr><tr><td>0</td><td><p>Potential minerals sites which are:</p><ul style="list-style-type: none">Not within 1km of an AQMA or where site traffic is not likely to travel through an AQMA (for human sensitive receptors); and/orUnlikely to result in HDV flows of greater than 200 AADT; and/or the HRA concludes sites will not have an adverse effect on the integrity of international nature conservation sites<p>are considered unlikely to have an impact on protecting air quality, although these impacts are very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p></td></tr><tr><td>-?</td><td><p>Potential minerals sites which are:</p><ul style="list-style-type: none">Within 1km of an Air Quality Management Area (AQMA) or where site traffic is likely to travel through an AQMA<p>are considered likely to have a minor negative impact on protecting air quality for human sensitive receptors, although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p></td></tr></table>	++	N/A	+	N/A	0	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none">Not within 1km of an AQMA or where site traffic is not likely to travel through an AQMA (for human sensitive receptors); and/orUnlikely to result in HDV flows of greater than 200 AADT; and/or the HRA concludes sites will not have an adverse effect on the integrity of international nature conservation sites <p>are considered unlikely to have an impact on protecting air quality, although these impacts are very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p>	-?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none">Within 1km of an Air Quality Management Area (AQMA) or where site traffic is likely to travel through an AQMA <p>are considered likely to have a minor negative impact on protecting air quality for human sensitive receptors, although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p>	
++	N/A										
+	N/A										
0	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none">Not within 1km of an AQMA or where site traffic is not likely to travel through an AQMA (for human sensitive receptors); and/orUnlikely to result in HDV flows of greater than 200 AADT; and/or the HRA concludes sites will not have an adverse effect on the integrity of international nature conservation sites <p>are considered unlikely to have an impact on protecting air quality, although these impacts are very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p>										
-?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none">Within 1km of an Air Quality Management Area (AQMA) or where site traffic is likely to travel through an AQMA <p>are considered likely to have a minor negative impact on protecting air quality for human sensitive receptors, although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p>										

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
	--?	<p>Potential minerals sites which are:</p> <ul style="list-style-type: none"> • Likely to result in HDV flows of greater than 200 AADT; and • (For effects on international nature conservation sites only): HDV transport to or from the site along the West Sussex Lorry Route Network is likely to pass within 200m of an international designated nature conservation site sensitive to air pollution <p>have the potential to have a significant negative impact on the nature conservation site through increased deposition of air pollutants, although this impact is dependent on the likely increase in HDV annual average daily traffic flows along the road passing within 200m of the nature conservation site (in combination with HDV movements from other existing and potential minerals sites). However, if the HRA concludes that there will not be a significant effect on European designated sites as a result of air pollution then this potential effect would be removed.</p>	
<p>11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Affect the quality of water bodies and/or interfere with the flows of these waters, including the potential risk to, and impacts on, the quality of aquifers and groundwater? 		<p>Background information affecting assumptions</p> <p>The Water Framework Directive¹³⁶ 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.</p> <p>The extent to which a minerals extraction 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. Furthermore, potential for adverse effects on water quality will also be assessed at the planning application stage.</p> <p>There are other regulatory regimes in place, such as the Environment Agency's Environmental Permitting regime, which require the minerals industry to obtain permits setting out thresholds for</p>	<p>Analysis of OS base maps for surface water bodies.</p> <p>Relevant water datasets (e.g. SPZs) provided by WSCC from the EA.</p> <p>Any relevant information from the WSCC site assessment process.</p>

¹³⁶ The European Water Framework Directive into force in December 2000, and was transposed into UK law by December 2003.

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)														
		<p>impacts on water supply and quality from minerals operations. Therefore, it is assumed that any minerals extraction operation that might occur in future on a site allocated in the Joint MLP will be undertaken in line with the Environmental Permit, which should help to minimise potential effects on water supply and quality.</p> <p>It will not be possible to assess water use and efficiency at this stage in the planning process, as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Assumptions for determining significance of effects on SA objective 11:</p> <table><tr><td>++</td><td>N/A</td></tr><tr><td>+</td><td>N/A</td></tr><tr><td>0</td><td>N/A</td></tr><tr><td>?</td><td>At this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</td></tr><tr><td>-</td><td>Sites not within SPZ1, but the WSCC/SDNPA site assessment identifies the potential for a minor negative effect due to either surface water bodies, or the site being on a major aquifer.</td></tr><tr><td>--?</td><td>Sites within SPZ1 and/or within/adjacent to a water body have the potential to have a significant negative effect. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</td></tr><tr><td></td><td>Where HRA concludes that sites will not have an adverse effect on the integrity of international nature conservation sites, then a minor uncertain effect will be recorded.</td></tr></table>	++	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 water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.	-	Sites not within SPZ1, but the WSCC/SDNPA site assessment identifies the potential for a minor negative effect due to either surface water bodies, or the site being on a major aquifer.	--?	Sites within SPZ1 and/or within/adjacent to a water body have the potential to have a significant negative effect. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.		Where HRA concludes that sites will not have an adverse effect on the integrity of international nature conservation sites, then a minor uncertain effect will be recorded.	
++	N/A																
+	N/A																
0	N/A																
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	Where HRA concludes that sites will not have an adverse effect on the integrity of international nature conservation sites, then a minor uncertain effect will be recorded.																
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.		<p>Background information affecting assumptions</p> <p>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 National Planning Practice Guidance¹³⁷, local authorities should take a sequential approach to developing in areas at risk of flooding, giving preference to locating</p>	<p>EA Flood Zone maps and WSCC SFRA.</p> <p>Any relevant information from the WSCC site assessment process.</p>														

¹³⁷ Available at: <http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/the-aim-of-the-sequential-test/>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Affect the likelihood of flooding or lead to inappropriate development in a flood risk zone (e.g. Flood Zones 2 or 3) contrary to national policy on flooding? ○ Impact on flood defences? ○ Provide opportunities for alleviation/mitigation? 		<p>development in Flood Zone 1, followed by Flood Zone 2 then Flood Zone 3. WSCC has undertaken a Strategic Flood Risk Assessment¹³⁸ (SFRA), which includes the Sequential Test for the potential mineral sites, and aims to steer new development to areas with the lowest probability of flooding.</p> <p>Notwithstanding the need to undertake the Sequential Test to inform the selection of sites, site specific Flood Risk Assessments (FRAs) will also be required to be produced by developers/applicants¹³⁹ at the planning application stage to demonstrate how flood risk from all sources of flooding to the development itself and flood risk to other will be managed now and taking climate change into account.</p> <p>Table 2 (Flood Risk Vulnerability Classification) in the National Planning Practice Guidance¹⁴⁰ 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 floodplain¹⁴¹. Sand and gravel workings are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. However, National Planning Practice Guidance¹⁴² also states that mineral workings should not increase flood risk elsewhere and need to be designed, worked and restored accordingly.</p> <p>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. Similarly, whether a site was likely to impact on flood defences would not be known until the planning application stage, as it will very much depend on the proposal (mineral type, design, method of working etc.), location and surrounding environment (e.g. topography) which would be assessed at the planning application stage.</p> <p>West Sussex is affected by six sources of flooding. Fluvial (river), tidal (the sea) and groundwater affect the largest areas. Other sources of flooding include flooding from surface water, sewers and from artificial sources (e.g. canals and reservoirs). The SFRA summarises the flood risk information</p>	

¹³⁸ Joint West Sussex Minerals Local Plan, Draft Strategic Flood Risk Assessment Update and Sequential Test of Mineral Sites (WSCC, July 2015).

¹³⁹ Available at: <http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/addressing-flood-risk-in-individual-planning-applications/>

¹⁴⁰ Available at: <http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/flood-zone-and-flood-risk-tables/table-2-flood-risk-vulnerability-classification/>

¹⁴¹ Available at: <http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/flood-zone-and-flood-risk-tables/table-3-flood-risk-vulnerability-and-flood-zone-compatibility/>

¹⁴² Available at: <http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/the-sequential-risk-based-approach-to-the-location-of-development/>

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
		for each site and the conclusion from the Sequential Test process carried out in accordance with the NPPF and the PPG. This information has informed the SA judgements for this objective as described below.	
		Assumptions for determining significance of effects on SA objective 12:	
	++	N/A	
	+?	Mineral workings (particularly sand and gravel sites) can potentially reduce flood risk by providing flood storage and attenuation, and could have minor positive effects on reducing vulnerability to flooding. However, these effects would be uncertain as a more detailed assessment would be required once proposals are known.	
	0?	Potential minerals sites which are: <ul style="list-style-type: none"> Identified as either having no effect (green) on all or most of the flooding sources and/or only a small part of the site (<10%) (yellow) within an area of flooding from all or most of the flooding sources are considered unlikely to have an effect on flood risk areas and unlikely to increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.	
	-?	Potential minerals sites which are: <ul style="list-style-type: none"> Identified as having a part of the site (11-30%) (amber) or a large part of the site (>30%) (red) within an area of flooding from one or more of the flooding sources could have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.	
	--	N/A	
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route		Background information affecting assumptions All mineral sites will involve road transportation of minerals with some involving more movements than 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 minerals. However, the railheads and wharves within West Sussex are predominantly used for the import/export of minerals rather than	National datasets and OS base map. Lorry Route Network dataset provided by WSCC.

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
<p>Network.</p> <p>Would the site/policy:</p> <ul style="list-style-type: none"> ○ Have the potential for rail or water-based access to and from mineral sites? ○ Lead to the production of traffic-derived pollutants, including CO₂, NO₂ and PM₁₀ due to road transport to and from minerals sites? ○ Optimise the use of the Lorry Route Network and reduce the use of rural roads thus reducing the disruption and pollutants caused by HGVs? 		<p>transporting minerals within the County.</p> <p>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 10, 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. The potential for increase in traffic-derived air pollutants due to road transport to and from the potential mineral sites has been assessed under SA objective 10.</p> <p>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. Preferred routing strategies for each of the potential mineral sites have been described in the Transport Assessment report undertaken for the MLP¹⁴³. The MLP Transport Assessment provides an overall conclusion in relation to each site's acceptability in highways terms. The acceptability rating considers the Access and Highway Impact for each site separately to reflect that it may be possible to have an unacceptable access arrangement but a highly acceptable development in terms of traffic impact. The criteria used to determine the overall acceptability of each site are set out in the methodology section of the Transport Assessment. Of relevance to determining the potential impact on this SA objective, and in particular optimising the use of the Lorry Route Network, reducing the use of rural roads and thus reducing the disruption and pollutants caused by HGVs, sites judged as having 'low' acceptability in the Transport Assessment are more likely to have negative effects. This is because these sites have been found to have uncertainties with regards to whether a safe and achievable access into the site can be provided and/or the site location and/or traffic routing may be routed through sensitive receptors, without the possibility of mitigation. Sites with 'medium' acceptability can access the highway network and may have traffic routed through sensitive receptors, but it may be possible to mitigate some of the development traffic through appropriate routing strategies or movement restrictions. Sites with 'high' acceptability can be accessed from the highway network and development traffic routing has minimal impact on sensitive receptors and requires minimal / no mitigation measures to be put in place.</p> <p>Assumptions for determining significance of effects on SA objective 13:</p>	Any relevant information from the WSCC site assessment process.

¹⁴³ West Sussex Minerals Local Plan, Transport Assessment. Paul Basham Associates Ltd, November, 2015.

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
	++	N/A – unless significant rail or water-based access opportunities to and from minerals extraction sites are identified by WSCC/SDNPA in the site assessment process, it is not considered likely that significant positive effects would occur from minerals development at any of the sites. The likelihood of this occurring would not be known until the planning application stage.	
	+	N/A	
	0	Potential sites which are: <ul style="list-style-type: none"> Assessed as having a 'high' acceptability rating in the Transport Assessment would have no effect on reducing the impacts of lorry traffic on the environment and communities. (Note that these sites would also record a minor negative effect as explained below, because opportunities for non-road based transport would not be achieved.)	
	-	All sites that do not have opportunities for non-road based transport could have a minor negative effect on this objective. <p>Potential sites which are:</p> <ul style="list-style-type: none"> Assessed as having a 'medium' acceptability rating in the Transport Assessment could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.	
	--	Potential sites which are: <ul style="list-style-type: none"> Assessed as having a 'low' acceptability rating in the Transport Assessment could have a significant negative effect on reducing the impacts of lorry traffic on the environment and communities.	
14. To reduce the emissions of greenhouse gases. Would the site/policy: <ul style="list-style-type: none"> Lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and 	Background information affecting assumptions The mineral industry (particularly aggregate quarrying) is energy intensive and consequently reducing greenhouse gas emissions and energy consumption, and the industry's overall carbon footprint in relation to minerals production are important matters. Mineral sites 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. Assumptions for determining significance of effects on SA objective 14:		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

SA Objectives and sub questions	Score	Justification/reasons for score	Data sources (and limitations)
machinery? ○ Reductions in transport distances by supporting the location of mineral extraction sites in proximity to surrounding markets for minerals and to serve local needs? ○ Encourage the use of renewable or lower carbon energy sources on-site (e.g. through the use of small on-site renewable energy sources, i.e. wind turbines, solar panels)?	++	N/A	to Adoption it is (the date and stage of each Local Plan will be referred to in the SA matrices). Any relevant information from the WSCC site assessment process.
	+	If minerals site is within close proximity (e.g. 10 km) of a strategic development location within the County, it could contribute to reducing transport distances of aggregates for construction.	
	0	N/A	
	?	There are opportunities to use small-scale on-site renewable energy sources to machinery used in the extraction process and/or on-site infrastructure (e.g. buildings/offices), however, this will depend on the proposal, which would be assessed at the planning application stage.	
	-	All sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although crushed rock sites are likely to be more intensive thus having greater effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.	
	--	N/A	

Appendix 5

SA matrices for the Policy Options (for the Regulation 18 Draft JMLP)

Minerals Supply Options

Sharp Sand & Gravel

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-	-?	N/A	N/A	<p>Policy option SSG1 may have minor negative impacts on health, well-being and amenity. The policy option supports the maintenance of supplies from existing permitted reserves of sharp sand and gravel. Therefore, this may continue to subject residents, neighbouring land uses and visitors to West Sussex to impacts such as dust, noise, vibration and traffic associated with the existing mineral workings, despite the conditions of the planning application for Kingsham Quarry stipulating that all plant, equipment and vehicle on the site are to be fitted and operated with silencing measures. Additionally the conditions outline that no operations should occur outside of 07.00 and 18.00 Monday to Friday and 07.30 to 13.00 on Saturday.</p> <p>However, the option may also have minor positive effects as it seeks to maintain supplies from existing permitted reserves therefore not resulting in new sites or impacts on previously unaffected residents, neighbouring land uses and visitors to West Sussex. Therefore, mixed minor positive/minor negative effects are expected on this SA objective.</p> <p>Policy option SSG2 ensures that proposals for new sharp sand and gravel sites, including extensions to existing sites can be considered on their merits which would provide the plan with flexibility. The approval of a 'windfall' site could affect the local amenity and the wellbeing of the local people in the short term through negative visual effects as well as increased noise, dust and traffic (especially with HGVs) derived from mineral activities. As such, a minor negative effect is identified for this SA objective.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>However, effects will be uncertain as the potential for effects will depend on the exact nature and design of the 'windfall' sites, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but these options are unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	+/-?	C 0	C +/-?	<p>Policy option SSG1 is unlikely to affect this SA objective as the maintenance of supply from existing permitted reserves is unlikely to result in any additional negative impacts on recreation, or result in the potential to enhance further recreation opportunities. The planning condition for Kingsham Quarry states that before site development occurs, a scheme needs to be submitted to the County Planning Authority that details the signage (including text, size, fixings and location) to be displayed highlighting the potential conflict between vehicles on site and users of Footpath 190 and an outline of mitigation measures to ensure the health and safety of path users.</p> <p>Policy option SSG1 is considered unlikely to have an effect on Cultural ecosystem services.</p> <p>Policy option SSG2 could have minor negative effects on this SA objective as new sites that could come forward under this policy option could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor positive effect is also identified. Therefore, this option is likely to have mixed, minor positive and minor negative effects on this SA objective. However, the effects</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>would be uncertain as the potential for effects will depend on the exact nature and design of 'windfall' sites, which would not be known until the planning application stage.</p> <p>Policy option SSG2 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	+	N/A	N/A	<p>Policy option SSG1 is unlikely to affect this SA objective as the maintenance of supply from existing permitted reserves is unlikely to further enhance the vitality and viability of the local economy.</p> <p>Policy option SSG2 is likely to have minor positive effects on this SA objective, as allowing sharp sand and gravel 'windfall' sites to come forward in certain circumstances which includes the expansion of existing sites is likely to have positive effects, as minerals are essential to sustain and enhance the vitality and viability of the local economy.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	+/-	S -	S -	<p>Policy option SSG1 is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves will not be classed as inappropriate development, as it will contribute to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as continued extraction from existing permitted reserves will not reduce the extraction of virgin materials. Therefore, the policy option is likely to have mixed, minor positive and minor negative effects on this SA objective.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>It is understood that policy option SSG1 primarily seeks to address the issue of the supply of sharp sand and gravel. However, the supporting text included in the policy options document for policy option SSG1 (i.e. "this option ensures that supplies from existing permitted reserves are maintained and not sterilised by other non-minerals development and so are available for the supply of sharp sand and gravel during the plan period") also relates to minerals safeguarding. It is recommended that this policy option and any resulting policy does not refer to minerals safeguarding and focuses on minerals supply, as minerals safeguarding is addressed in separate policy options.</p> <p>Policy option SSG2 is likely to have minor positive effects on this SA objective as 'windfall' sites permitted the policy option will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as sites permitted under the policy option will not reduce the extraction of virgin materials. Therefore, the policy option is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and	+/-?	-?	C +/-?	C -?	<p>Policy option SSG1 is likely to have minor positive effects on this SA objective as in the long term the restoration of the existing site (Kingsham Quarry) which contains the existing permitted reserves could lead to positive effects for the landscape via the restoration of the site. Kingsham Quarry's planning conditions outline that a 5 year after</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
landscape character in West Sussex.					<p>scheme needs to be submitted to the County Council within one year of mineral works ceasing. The conditions also state that the site shall be restored in a progressive sequence following the completion of each phase of mineral extraction. The conditions also detail that restoration of the site should be completed within two years of the permanent working stopping at the site and that all plant, structures and machinery are to be removed from the site.</p> <p>However, minor negative effects are also likely as continued extraction in the short term/long term could result in continued impacts on the landscape despite the planning conditions detailing that all stockpiles shall be no more than 5m and temporary stockpiles no more than 3m. Therefore, the policy option is likely to have mixed, minor positive and minor negative effects on this SA objective. These effects are uncertain as the potential for positive effects will not be known until the later stages of the sites working life.</p> <p>Mixed minor positive and minor negative uncertain effects are likely for policy option SSG1 in relation to Cultural ecosystem services.</p> <p>Policy option SSG2 is likely to have minor negative effects on this SA objective as the development of 'windfall' sites could result in landscape impacts in the short/long term. The effects would be uncertain as the potential for effects will depend on the exact nature and design of 'windfall' sites, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are likely for policy option SSG2 in relation to Cultural ecosystem services.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+/-?	-?	P +/-? R +/-? C +/-?	P -? R -? C -?	<p>Policy option SSG1 is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves as Kingsham Quarry will prolong the life of the site, which may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. Kingsham Quarry's planning conditions outline that a 5 year after scheme needs to be submitted to the County Council within one year of mineral works ceasing. The conditions also state that the site shall be restored in a progressive sequence following the completion of each phase of mineral extraction. However, minor negative effects are also possible due to the continuation of working thereby impacting on designated sites, protected species or habitats. The policy option is likely to have mixed, minor positive and minor negative effects on this SA objective. These effects are uncertain as the potential for positive effects will not be known until the later stages of the sites working life.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for policy option SSG1 in relation to Provisioning, Regulatory and Cultural ecosystem services.</p> <p>Policy option SSG2 could potentially lead to negative effects for biodiversity, as potential 'windfall' sites could have potential impacts on designated sites, protected species or habitats. Therefore, a minor negative effect is expected for this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature and design of 'windfall' sites, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for policy option SSG2 in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
7. To protect and conserve geodiversity.	+/-?	+/-?	C +/-?	C +/-?	<p>Policy option SSG1 may lead to minor negative effects as the continued extraction of existing permitted reserves may uncover and harm geological interests. However, the existing site (Kingsham Quarry) may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. The policy option 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 what geological features may or may not be uncovered during the working life of the permitted reserves.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for policy option SSG1 in relation to Cultural ecosystem services.</p> <p>Policy option SSG2 may lead to minor negative effects as potential 'windfall' sites may uncover and harm geological interests. However, windfall sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, a mixed minor negative and positive effect is expected for this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of 'windfall' sites, which would not be known until the planning application stage.</p> <p>Mixed minor positive and negative uncertain effects are considered likely for policy option SSG2 in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	+/-?	C +/-?	C +/-?	<p>Policy option SSG1 is likely to have minor negative effects on this SA objective, as the continuation of working at Kingsham Quarry could negatively affect the historic environment (e.g. archaeology), heritage assets and their setting as a result of associated</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>mineral activities. However, the site may be able to preserve any uncovered findings and therefore benefit our understanding of the local archaeology or contribute towards the local vernacular. The Kingsham Quarry planning conditions state that prior to site development, a programme of archaeological work including the provision of an Archaeological Mitigation Strategy document needs to be approved by the County Council. This is to ensure that archaeological remains on the site shall be adequately investigated and recorded. The policy option 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 what historic environment features may or may not be affected or uncovered during the working life of the permitted reserves.</p> <p>Policy option SSG2 provides support to the development of 'windfall' sites. These sites may 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. However, minor positive effects are also likely as sites could uncover and help preserve historic features or findings thereby conserving and enhancing West Sussex's historic environment. Therefore, the option is likely to have uncertain, mixed minor positive/minor negative effects on this SA objective. Also, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of 'windfall' sites, which will not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for both options (SSG1 and SSG2) in relation to Cultural ecosystem services.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	-?	R 0	R -?	<p>Policy option SSG1 is unlikely to affect this SA objective, as the permitted reserves are located within the active Kingsham Quarry and therefore any affects or potential enhancements on soil quality would have already been appropriately dealt during the determination of the relevant planning application, as would the aim of minimising the loss of best and most versatile land. For example, the planning conditions stipulate that topsoil and subsoil shall only be stripped when they are in a dry and friable condition. Therefore, further effects are unlikely.</p> <p>Policy option SSG1 is unlikely to have any effect on Regulating ecosystem services.</p> <p>Policy option SSG2 is likely to permit 'windfall' sites that may result in the loss of best and most versatile land, although this will depend on the criteria included in the policy. Furthermore, 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.</p> <p>Minor negative uncertain effects are considered likely policy option SSG2 in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-	-?	R -	R -?	<p>Policy option SSG1 supports the supply of sharp sand and gravel from existing permitted reserves. Therefore, the existing primary extraction site (Kingsham Quarry) will continue to operate, involving 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 Advisory Lorry Route. The planning conditions state that dust mitigation measures outlined in the Environmental</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>Statement (such as the use of a bowser spray to prevent the dust becoming airborne; use of hydraulic lifts to move soil; and all vehicles leaving the site to pass through a full underbody wheel cleaner before joining the concreted section of the highway) are to be carried out throughout the operation of the site. Therefore, minor negative effects are likely for this SA objective as despite the mitigation measures, the nature of mineral workings will contribute to a degradation of air pollution.</p> <p>Policy option SSG1 is considered likely to have minor negative effects in relation to Regulating ecosystem services.</p> <p>Policy option SSG2 is likely to result in 'windfall' sites that are likely to be predominantly located in rural locations, thereby increasing the mileage of associated traffic movements and their associated emissions. Therefore, minor negative effects are likely for this SA objective. However, the exact location of 'windfall' sites (e.g. in relation to the Advisory Lorry Route) and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Policy option SSG2 is considered likely to have minor negative uncertain effects in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water	-	?	-	R ?	<p>Policy option SSG1 supports the supply of sharp sand and gravel from existing permitted reserves. Therefore, the existing primary extraction site (Kingsham Quarry) will continue to operate, involving activities that may negatively affect water resources and quality (e.g. operations creating suspended fines in the water) through the one surface ditch that runs between the farm buildings and the Chichester Canal that forms the western boundary of the site. The site also has groundwater lying between 0.5 and</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
environment.					<p>2m below the surface. Mitigation measures have been identified in the site's planning conditions, including silt disposal modelling and the bunding of areas used to handle oil, fuel and other potential pollutants to avoid continuation of the water courses. The planning conditions further state that within 5 years of the restoration of the site, a survey of all the lake banks is to occur in order to maintain groundwater flow.</p> <p>A minor negative effect is identified as, despite the mitigation measures mentions, the nature of mineral workings will contribute to the deterioration of water quality. While policy option SSG2 may lead to 'windfall' sites coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of policy option SSG2 on Regulating ecosystem services are uncertain at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	+	R +	R +	<p>Policy option SSG1 supports the supply of sharp sand and gravel from existing permitted reserves at Kingsham Quarry. Therefore, as the policy option relates to a sand and gravel extraction site, the policy option is not expected to have an effect on this SA objective, as sand and gravel workings are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. The Environmental Statement states that the Kingsham Quarry site should not result in any impact to the flood storage capacity. The planning conditions also state that within 5 years of the restoration of the site, a survey of all the lake banks is to occur in order to</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>reduce flood risk. Therefore, a minor positive affect is likely on this SA objective.</p> <p>Minor positive uncertain effects are considered likely for policy option SSG1 in relation to Regulating ecosystem services.</p> <p>Policy option SSG2 is likely to result in 'windfall' sites for sharp sand and gravel. Therefore, as the policy option relates to sand and gravel extraction sites, the policy option is not expected to have an effect on this SA objective, as sand and gravel workings are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. However, this also means that 'windfall' sites may have the potential to increase flood capacity and have minor positive effects on this SA objective, although effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the 'windfall' sites, which would not be known until the planning application stage. Therefore, a minor positive uncertain affect is likely on this SA objective.</p> <p>Minor positive uncertain effects are considered likely for policy options SSG1 and SSG2 in relation to Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	-	R -	R -	<p>Policy option SSG1 supports the supply of sharp sand and gravel from existing permitted reserves. Therefore, the existing primary extraction site (Kingsham Quarry) will continue to operate, transporting extracted material by road. The planning conditions for Kingsham Quarry state that no more than 154 Heavy Goods Vehicles (77 in, 77 out) arising from site operations in one day. Therefore, minor negative effects are expected for this SA objective.</p> <p>Policy option SSG2 is likely to result in 'windfall' sites that are likely to be predominantly located in rural locations. The expansion and development of 'windfall' sites would</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. This is unlikely to change due to the high capital costs of rail infrastructure. As such, a minor negative effect is likely on this SA objective.</p> <p>Both policy option (SSG1 and SSG2) are considered likely to have minor negative effects in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+?	+?	R +?	R +?	<p>Policy option SSG1 supports the supply of sharp sand and gravel from existing permitted reserves which will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the maintenance of existing supplies. This therefore potentially reduces the need for additional importation of sharp sand and gravel into West Sussex. However, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it depends on any measures implemented as part of the existing site and how successfully they have been implemented, which is not currently known.</p> <p>Policy option SSG2 is likely to result in 'windfall' sites for sharp sand and gravel which will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the supply of sharp sand and gravel from within West Sussex. This therefore potentially reduces the need for additional importation of sharp sand and gravel into West Sussex. However, to what degree this will reduce the need for imported material uncertain. Furthermore, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	SSG1	SSG2	SSG1	SSG2	
					<p>application stage.</p> <p>Minor positive uncertain effects are considered likely for both policy options (SSG1 and SSG2) in relation to Regulating ecosystem services</p>

Soft Sand – SS2

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>The policy option supports both the maintenance of supplies from permitted reserves of soft sand, the identification of allocations and/or areas of search in West Sussex beyond the SDNP, and the allowance of imports to meet requirements. This may therefore affect the local amenity and the wellbeing of residents, neighbouring land uses and visitors to West Sussex due to impacts such as dust, noise, vibration and traffic associated with mineral workings. However, effects will be uncertain as the potential for effects will depend on the exact nature and design of any site allocations/areas of search that come forward, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but these options are unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>The policy option could have minor negative effects on this SA objective as site allocations that could come forward under this policy option or increases in imports could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor positive effect is also identified. It is unlikely that sites containing existing permitted reserves would affect this SA objective as they are unlikely to result in any additional negative impacts on recreation, or result in the potential to enhance further recreation opportunities. Therefore, this option 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 any site allocations/areas of search that come forward, which would not be known until the planning application stage.</p> <p>This policy option could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>The policy option is likely to have minor positive effects on this SA objective, as providing support for the maintenance of supplies from existing permitted reserves and identifying sites allocations and/or areas of search that could come forward is likely to have positive effects, as minerals are essential to sustain and enhance the vitality and viability of the local economy. However, these positive effects are uncertain as the policy option also allows for imports to meet requirements which cannot be met from indigenous supplies due to the fact the option is unlikely to ensure a 7 year landbank will be maintained during the plan period. Therefore, the local economy may not directly benefit from the extraction of material that is imported into West Sussex.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>This policy option is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves and identification of allocations and /or areas of search that could come forward will not be classed as inappropriate development, as this will contribute to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as continued extraction from existing permitted reserves or from permitted site allocations/areas of search will not reduce the extraction of virgin materials. Therefore, the policy option is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>It is understood that this policy option primarily seeks to address the issue of the supply of soft sand. However, the option and supporting text included in the policy options document for the policy option (i.e. "this option involves the safeguarding of existing permitted reserves of soft sand") also relates to minerals safeguarding. It is recommended that this policy option and any resulting policy does not refer to minerals safeguarding and focuses on minerals supply, as minerals safeguarding is addressed in separate policy options.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>This policy option is likely to have minor positive effects on this SA objective as it seeks to prevent the allocation of additional sites or extensions to existing sites within the SDNP, thereby giving protection to key landscape designations in West Sussex. Furthermore, in the long term the restoration of sites containing permitted reserves and site allocations and/or areas of search that come forward could lead to positive effects for the landscape. However, minor negative effects are also likely as continued extraction in the short term/long term at existing sites and future allocated sites/areas of search could result in continued and new impacts on the landscape. The effects would be uncertain as the potential for effects will depend on the exact nature and design of any site allocations/areas of search that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are likely for this policy option in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+/-?	P +/-? R +/-? C +/-?	<p>The policy option is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves and working of any allocated sites/areas of search that may come forward may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. However, the allocation of sites for minerals working and mineral exploration may also have adverse effects on designated sites, protected species or habitats during operation of those sites. The policy option is therefore likely to have mixed, minor positive and minor negative effects on this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature and design of any site allocations/areas of search that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for this</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			policy option in relation to Provisioning, Regulatory and Cultural ecosystem services.
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>This policy option may lead to minor negative effects as the continued extraction of existing permitted reserves and/or working of permitted allocated sites/areas of search may uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. The policy option 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 any site allocations/areas of search that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for this policy option in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>This policy option is likely to have minor negative effects on this SA objective, as the maintenance of supply from permitted reserves and/or working of permitted allocated sites/areas of search could negatively affect the historic environment (e.g. archaeology), heritage assets and their setting as a result of associated mineral activities. However, sites may be able to preserve any uncovered findings and therefore benefit our understanding of the local archaeology or contribute towards the local vernacular. Furthermore, the policy options seeks to prevent the allocation of additional sites or extensions to existing sites within the SDNP, thereby giving protection to key landscape designations and their historic character and setting in West Sussex. The policy option 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 any site allocations/areas of search that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely this policy</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			option in relation to Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	<p>It is unlikely that sites containing permitted reserves would affect this SA objective as they are unlikely to result in any additional negative impacts as the permitted reserves are located within the active sites and therefore any affects or potential enhancements on soil quality would have already been appropriately dealt during the determination of the relevant planning application, as would the aim of minimising the loss of best and most versatile land. However, via support to additional allocations and/or areas of search in West Sussex, this policy option may result in the loss of best and most versatile land. However, the exact location and grade of agricultural land that might be lost 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.</p> <p>Minor negative uncertain effects are considered likely for this policy option in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	--?	R --?	<p>This policy option supports the supply of soft sand from permitted reserves and potential site allocations and/or areas of search that may come forward. Therefore, this policy option is likely to have negative impacts on this SA objective due to activities (e.g. lorry traffic) that may negatively affect air quality due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the Advisory Lorry Route. Furthermore, the increased dependence on imports to meet requirements which cannot be met from indigenous supplies is likely to result in increases in lorry traffic transporting material into West Sussex, and increases in air pollution. Therefore, overall, a significant negative effect is anticipated. However this is uncertain as it will depend on the level of imports that are required to meet the demand in West Sussex, which will not be known until more certainty is gained on the identified site allocations/areas of search for soft sand supply.</p> <p>This policy option is considered likely to have significant negative uncertain effects in</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			relation to Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>While this policy option seeks to maintain supplies from permitted reserves and may lead to allocation sites and/or areas of search coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on sites proposals (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of this policy option on Regulating ecosystem services are uncertain at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	R +?	<p>This policy option relates to soft sand extraction and is therefore not expected to have an effect on this SA objective, as sand and gravel workings are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. However, this also means any sites may have the potential to increase flood capacity and have minor positive effects on this SA objective, although effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of any site allocations/areas of search that come forward, which would not be known until the planning application stage. Therefore, a minor positive uncertain affect is likely on this SA objective.</p> <p>Minor positive uncertain effects are considered likely for this policy option in relation to Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the	--?	R --?	<p>This policy option supports the supply of soft sand from permitted reserves and potential site allocations and/or areas of search that may come forward. Therefore, existing primary extraction sites will continue to operate, transporting extracted material by road, and any allocated sites/areas of search that come forward will be likely to increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. Furthermore, the increased dependence on imports to meet requirements</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
Lorry Route Network.			<p>which cannot be met from indigenous supplies is likely to result in increases in lorry traffic transporting material into West Sussex by road. Therefore, overall, a significant negative effect is anticipated. However this is uncertain as it will depend on the level of imports that are required to meet the demand in West Sussex, which will not be known until more certainty is gained on the identified site allocations/areas of search for soft sand supply.</p> <p>This policy option is considered likely to have significant negative effects in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-?	R +/-?	<p>This policy option supports the supply of soft sand from permitted reserves and potential site allocations and/or areas of search that may come forward, which will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the maintenance of existing supplies. This therefore potentially reduces the need for additional importation of soft sand into West Sussex. However, the increased dependence on imports to meet requirements which cannot be met from indigenous supplies is likely to result in increases in lorry traffic transporting material into West Sussex by road. Therefore, minor negative effects are also expected due to increases in the emission of greenhouse gases. However, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for this policy option in relation to Regulating ecosystem services.</p>

Secondary and Recycled Aggregate – SRA1

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>This policy option encourages the use of secondary and recycled aggregates in construction. In West Sussex the main source of alternative aggregates is recycled inert material from construction and demolition waste.</p> <p>The West Sussex Waste Local Plan (WLP) includes policies (e.g. W1, W4 and W10) which steer and allocate the location of sites and provide protection to the environment and communities. There may be minor negative effects on the local amenity and the wellbeing of residents, neighbouring land uses and visitors to West Sussex 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. Therefore, any effects would be uncertain.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but these options are unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>This policy option encourages the use of secondary and recycled aggregates in construction. In West Sussex the main source of alternative aggregates is recycled inert material from construction and demolition waste.</p> <p>The West Sussex Waste Local Plan (WLP) includes policies (e.g. W1, W4 and W10) which steer and allocate the location of sites and provide protection to the environment and communities. The policy option could have minor negative effects on this SA objective as recycled and secondary aggregate sites that could come forward could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of new sites and so a minor positive effect is also identified. Therefore, this option 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>design of the sites, which would not be known until the planning application stage. Therefore, any effects would be uncertain.</p> <p>The option is considered likely to have a mixed minor positive and negative effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Secondary and recycled 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 West Sussex and the country need. The policy option 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</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	S -	<p>The intention of this option 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.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p> <p>While the intention of the policy option to support the increased use of secondary/recycled aggregate is understood, the current wording of the policy option seems more like a policy that would be included in a district/borough local plan, as it is not the JMLP that will encourage non-minerals developers to use secondary/recycled aggregate in construction; management of general construction development is covered by policies in district/borough local plans. It is understood that there are other county matters (e.g. schools and libraries) which the County Council will be responsible for delivering, however, these would still be determined in accordance with the policies included in the district/borough local</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			plans. The inclusion of the policy option in its current wording would not have a direct effect on the supply of secondary/recycled aggregate as there is no mechanism in the policy option's wording to support this. It is therefore recommended that wording of the policy option is changed along the lines of supporting the supply of secondary and recycled aggregates and their processing sites in accordance with proposed development management policies (e.g. Plant, processing and secondary activities), minerals infrastructure safeguarding options and policies included in the West Sussex Waste Local Plan (e.g. Policies W1, W4 and W10).
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>The policy option 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. However, the policy option 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 option 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 secondary/recycled aggregate facilities that would supply material for use in construction, which would not be known for new sites until the planning application stage.</p> <p>This policy option could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+/-?	P +/-? R +/-? C +/-?	<p>The policy option could potentially lead to 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. However, the policy option could also lead to positive effects, as it may result in net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. Therefore, this policy option is likely to have mixed, minor positive and minor negative effects on this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Although the effects would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities that would supply material for use in construction, which would not be known for new sites until the planning application stage.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for this policy option in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0?	<p>No effects are expected on this SA objective as secondary/recycling aggregate facilities used to supply material for construction are unlikely to affect geodiversity due to their nature, scale and type of operation.</p> <p>The option is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The policy option is likely to have minor negative effects on this SA objective, as some secondary/recycling aggregate facilities used to produce material for use in construction are intensive and could therefore negatively affect heritage assets and their setting due to noise and vibration associated with working. However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities that would supply material for use in construction, which would not be known for new sites until the planning application stage.</p> <p>This policy option could have minor negative uncertain effects on Cultural ecosystem services</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0?	R 0?	<p>The exact land take and location of any future secondary/recycling aggregate facilities used to produce material for use in construction 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), and whether improvements to soil quality through site restoration are possible is also unknown at this stage. However, the West Sussex Waste Local Plan provides a steer towards the location of secondary/recycled aggregate facilities away from greenfield sites, and as such, this policy option is considered unlikely to have an effect on</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>this SA objective.</p> <p>This policy option could have minor negative uncertain effects on Regulating ecosystem services</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>The policy option 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. However, this would be uncertain as the potential for effects will depend on the exact nature and design of secondary/recycled aggregate facilities that would supply material for use in construction, which would not be known for new sites until the planning application stage.</p> <p>This policy option could have minor negative uncertain effects on Regulating ecosystem services</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>While this option may affect water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of this option on Regulating ecosystem services are uncertain at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate	0?	R 0?	<p>The policy option is not expected to have an effect on flood risk areas, as the West Sussex Waste Local Plan provides a steer towards the location of secondary/recycled aggregate facilities which produce material for use in construction to be outside of flood risk zones.</p> <p>The option is considered unlikely to have any effect on Regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
development in the floodplain.			
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	<p>This policy option is likely to have minor negative effects 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. 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 that would supply material for use in construction, and their traffic levels, lorry routing and access arrangements, which would not be known for new sites until the planning application stage. Therefore, these effects are uncertain.</p> <p>This policy option could have minor negative uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+	R +	<p>The policy option 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 high emissions levels and climate change. However, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals they are used to determine and how successfully they are implemented, which would not be known for new facilities until the planning application stage.</p> <p>This policy option could have minor positive uncertain effects on Regulating ecosystem services.</p>

Silica Sand - SiS1

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>This policy option is likely to have minor negative effects on this SA objective due to sites that may be permitted under a criteria-based policy resulting in negatives effects associated with mineral operations (e.g. dust, noise, and traffic levels), potentially affecting the health, well-being and amenity of people living and working in, and visiting West Sussex. Furthermore, the approach of not identifying sites provides less certainty to communities. Therefore, a minor negative effect is expected for this SA objective. The effects would be 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.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this option is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>The option may permit sites which could have potential negative effects on recreation opportunities (e.g. Public Rights of Way) by restricting access to or affecting the amenity of users. However, sites considered against this option could provide positive effects through restoration opportunities for recreation. Therefore, this option is likely to have mixed, minor positive and minor negative effects on this SA objective. The effects would be 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.</p> <p>The option could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>The option provides support to unallocated 'windfall' sites where they accord with the criteria-based policy, thereby making a positive contribution to the local economy via new jobs that may be created. Therefore a minor positive effect is expected on this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this option is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>This option is likely to have minor positive effects on this SA objective as unallocated silica sand sites permitted under a criteria-based policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as sites permitted under a criteria-based policy will not reduce the extraction of virgin materials. Therefore, the policy option is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/--?	C +/--?	<p>The option could potentially lead to significant negative effects for landscape character, as unallocated sites are likely to be located within the SDNP due to the location of the resource, thereby negatively impacting on this nationally important landscape designation. However, due to the location of the resource in the SDNP, the exceptional circumstances and public interest tests would have to be applied to any applications that came forward for development and this would be reflected in the policy. Sites may also have minor positive effects in the long term as the restoration of sites could lead to positive effects for the landscape. Therefore, this option is likely to have mixed, minor positive and significant negative effects on this SA objective. 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.</p> <p>Mixed, minor positive and significant negative uncertain effects are considered likely for this option in relation to Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>The option could potentially lead to negative effects for biodiversity, as proposals for unallocated sites could have potential impacts on designated sites, protected species or habitats. Therefore, a minor negative effect is expected for this SA objective. The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for this option in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>The option may lead to minor negative effects as proposals for unallocated sites may uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. . Therefore, a mixed minor negative and positive effect is expected for this SA objective. 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.</p> <p>Mixed minor positive and negative uncertain effects are considered likely for this option in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>The option provides support to the development of unallocated sites via a criteria-based policy. Sites permitted by the policy may be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the proposed 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. Therefore, the option is likely to have uncertain, mixed minor positive/minor negative effects on this SA objective. 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.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Mixed, significant positive and minor negative uncertain effects are considered likely for this option in relation to Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	<p>This option and its criteria-based policy is likely to permit sites that may result in the loss of best and most versatile land, although this will depend on the criteria included in the policy. Furthermore, the exact land take and grade of agricultural land quality, 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.</p> <p>Minor negative uncertain effects are considered likely for this option in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>Unallocated silica sand sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated traffic movements and their associated emissions. Therefore, this option is likely to have minor negative effects on this SA objective. However, the exact location of proposals and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Minor negative uncertain effects are considered likely for this option in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>While this option of a criteria-based policy may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of this option on Regulating ecosystem services are uncertain at this stage.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	R +?	<p>This option could result in extraction of new silica sand sites. Therefore, , the policy option is not expected to have an effect on this SA objective, as sand and gravel workings (including silica sand) are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. However, this also means that any silica sand sites that come forward may have the potential to increase flood capacity and have minor positive effects on this SA objective, although effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the sites, which would not be known until the planning application stage. Therefore, a minor positive uncertain affect is likely on this SA objective.</p> <p>Minor positive uncertain effects are considered likely for this policy option in relation to Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	<p>Proposals for new silica sand sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated lorry traffic movements. Therefore, this option is likely to have minor negative effects on this SA objective. 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.</p> <p>This policy option is considered likely to have minor negative uncertain effects in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+?	R +?	<p>This option will have minor positive effects on reducing the emission of greenhouse gases as it supports new sites that will work local silica sand, potentially reducing the need for the importation of silica sand into West Sussex. However, to what degree this will reduce the need for imported material is uncertain. Furthermore, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor positive uncertain effects are considered likely for this option in relation to Regulating</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			ecosystem services.

Clay

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	-?	N/A	N/A	<p>Clay sites, due to their methods of extraction are typically less intensive than other minerals worked in West Sussex. However, the associated works where clay is used to make brick, may be visually intrusive and operation of the plant and distribution of the finished products can cause increases in noise and traffic. Therefore, overall the effects on health, wellbeing and amenity are likely to be minor negative for both policy options (CL1 and CL2). The effects would be uncertain as the potential for effects will depend on the exact nature, design and operation of the sites, which would not be known until the planning application stage.</p> <p>Policy option CL1 would provide more certainty to residents, neighbouring land uses and visitors to West Sussex due to the allocation of a specific site although this is unlikely to influence the minor negative uncertain effect.</p> <p>Similarly, policy option CL2 may subject new areas to negative impacts associated with clay sites due to the support it provides to 'satellite' sites although this is unlikely to influence the minor negative uncertain effect.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but these options are unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open	+/-?	+/-?	C +/-?	C +/-?	<p>Both policy options (CL1 and CL2) could have minor negative effects on this SA objective as allocated sites, extensions to existing sites, and 'satellite' sites that could come forward under these policy options could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor positive effect is also identified. Therefore, both</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
spaces and Public Rights of Way (PROW).					options are likely to have mixed, minor positive and minor negative effects on this SA objective. However, 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. Both policy options (CL1 and CL2) could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	+	N/A	N/A	Both policy options (CL1 and CL2) provide support to new sites, thereby making a positive contribution to the local economy via new jobs. Therefore, minor positive effects are expected on this SA objective. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this option is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	+/-	S -	S -	Both policy options (CL1 and CL2) are likely to have minor positive effects on this SA objective as sites permitted under the policy options will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as permitted clay sites will not reduce the extraction of virgin materials. Therefore, the policy options are likely to have mixed, minor positive and minor negative effects on this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible,	+/--?	+/-?	C +/--?	C +/-?	Policy option CL1 is likely to have minor positive effects on this SA objective as in

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
enhance the landscape, local distinctiveness and landscape character in West Sussex.					<p>the long term the restoration of the allocated site (Land Adjacent to West Hoathly Brickworks), and potential extensions to existing sites could lead to positive effects for the landscape via the restoration of sites. However, significant negative effects are expected as the allocated site (Land Adjacent to West Hoathly Brickworks) is located within the High Weald AONB which is a national designation. If this site was to come forward under this policy then negative effects on this SA objective could result in landscape impacts in the short/long term. The effects would be 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.</p> <p>Mixed minor positive and significant negative effects are considered likely for policy option CL1 in relation to Cultural ecosystem services.</p> <p>Policy option CL2 is likely to have minor positive effects on this SA objective as in the long term the restoration of potential extensions to existing sites and/or 'satellite sites' could lead to positive effects for the landscape via the restoration of sites. Furthermore, preference would be given to sites outside of the AONB and National Park. However, minor negative effects are also expected as sites to come forward under this criteria-based policy could result in landscape impacts in the short/long term. The effects would be 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.</p> <p>Mixed minor positive and minor negative effects are considered likely for policy option CL2 in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	-?	P -? R -? C -?	P -? R -? C -?	Both policy options (CL1 and CL2) could potentially lead to minor negative effects for biodiversity, as proposals for allocated sites, extensions to existing sites, or 'satellite' sites could have potential impacts on designated sites, protected species or habitats. Therefore, minor negative effects are expected for this SA objective.

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
					<p>The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for these options in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	+/-?	C +/-?	C +/-?	<p>Both policy options (CL1 and CL2) could potentially lead to minor negative effects for geodiversity, as proposals for allocated sites, extensions to existing sites, or 'satellite' sites could lead to potential impacts due to the potential to uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, mixed minor negative and positive effects are expected for this SA objective. 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.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	++/-?	++/-?	C ++/-?	C ++/-?	<p>Both policy options (CL1 and CL2) provide support to the development of sites and extensions to existing sites. Sites permitted by these policy options could help conserve the historic environment in West Sussex and maintain its local distinctiveness, as they may work clay (e.g. Gault Formation) which is used in products such as hand-made bricks which have aesthetic and restoration uses, thereby contributing to conserving and enhancing West Sussex's historic environment. Sites permitted by the policy options may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the proposed policy options may also have minor negative effects on this</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
					<p>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. Therefore, the policy options are likely to have uncertain, mixed significant positive/minor negative effects on this SA objective. 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.</p> <p>Mixed, significant positive and minor negative uncertain effects are considered likely for these policy options in relation to Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	-?	R -?	R -?	<p>The exact land take and location of sites that could come forward under both policy options (CL1 and CL2) and whether there could be loss of high quality agricultural land or improvements to soil quality through site restoration will not be known until the planning application stage, therefore effects on this SA Objective are likely to be minor negative uncertain.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	--?	R -?	R --?	<p>Policy option CL1 may potentially result in an allocated site (Land Adjacent to West Hoathly Brickworks), and potential extensions to existing sites coming forward. The working of these sites will result in traffic movements with associated emissions over reasonable distances, as it is viable to transport clay 25-30 miles. Therefore, minor negative effects are likely for this SA objective. However, the policy option outlines that sites should be well located to the Advisory Lorry Route and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Policy option CL1 is considered likely to have minor negative uncertain effects in</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
					<p>relation to Regulating ecosystem services.</p> <p>Policy option CL2 may result in extensions to existing sites and 'satellite' sites coming forward. The working of these will result in traffic movements with associated emissions over reasonable distances, as it is viable to transport clay 25-30 miles. Furthermore, 'satellite' sites would lead to more vehicle movements as material is transported to the brickworks from the 'satellite' sites. Therefore, overall significant negative effects are likely for this SA objective. However, the policy option outlines that sites should be well located to the Advisory Lorry Route and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Policy option CL2 is considered likely to have significant negative uncertain effects in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	?	R ?	R ?	<p>Both policy options (CL1 and CL2) may lead to sites coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of these policy options on Regulating ecosystem services are uncertain at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing	0?	0?	R 0?	R 0?	<p>Neither policy option (CL1 or CL2) is 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 clay sites are unlikely to be located in.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
inappropriate development in the floodplain.					<p>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.</p> <p>These policy options are considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	--?	R -?	R --?	<p>Policy option CL1 may potentially result in an allocated site (Land Adjacent to West Hoathly Brickworks), and potential extensions to existing sites coming forward. The working of these sites would increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. This is unlikely to change due to the high capital costs of rail infrastructure. Therefore, minor negative effects are likely for this SA objective. However, the policy option outlines that sites should be well located to the Advisory Lorry Route and routing and traffic movements will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Policy option CL1 is considered likely to have minor negative uncertain effects in relation to Regulating ecosystem services.</p> <p>Policy option CL2 may result in extensions to existing sites and 'satellite' sites coming forward. The working of these sites would increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. This is unlikely to change due to the high capital costs of rail infrastructure. Furthermore, 'satellite' sites would lead to more vehicle movements as material is transported to the brickworks from the 'satellite' sites. Therefore, overall significant negative effects are likely for this SA objective. However, the policy option outlines that sites should be well located to the Advisory Lorry Route and routing and traffic movements will not be known until the planning application stage, therefore these effects are uncertain.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
					Policy option CL2 is considered likely to have significant negative uncertain effects in relation to Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	+	+/-	R +	R +/-	<p>Policy option CL1 may potentially result in an allocated site (Land Adjacent to West Hoathly Brickworks), and potential extensions to existing sites coming forward. This will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the supply of clay from within West Sussex. This therefore potentially reduces the need for additional importation into West Sussex. However, to what degree this will reduce the need for imported material is uncertain. Furthermore, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Policy option CL1 is considered likely to have minor positive uncertain effects in relation to Regulating ecosystem services.</p> <p>Policy option CL2 may potentially result in extensions to existing sites and 'satellite' sites coming forward. This will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the supply of clay from within West Sussex. This potentially reduces the need for additional importation into West Sussex. However, minor negative effects are also expected as 'satellite' sites would lead to more vehicle movements as material is transported to the brickworks from the 'satellite' sites, thereby increasing emissions of greenhouse gases. Furthermore, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage. Therefore, mixed minor positive and minor negative uncertain</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CL1	CL2	CL1	CL2	
					<p>effects are expected.</p> <p>Policy option CL2 is considered likely to have mixed minor positive and minor negative uncertain effects in relation to Regulating ecosystem services.</p>

Chalk

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CH1	CH2	CH1	CH2	
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	-?	N/A	N/A	<p>Policy option CH1 allows proposals for small scale chalk sites to be assessed against a criteria-based policy. The approval of new small scale sites could affect the local amenity and the wellbeing of the local people in the short term through negative visual effects as well as increased noise, dust and traffic (especially with HGVs) derived from mineral activities. New sites could potentially mean new communities, neighbouring land uses and visitors to West Sussex are negatively affected. As such, a minor negative effect is identified for this SA objective. However, effects will be uncertain as the potential for effects will depend on the exact nature and design of the small scale sites, which would not be known until the planning application stage.</p> <p>Policy option CH2 allows proposals for extensions to existing permitted chalk sites to be assessed against a criteria-based policy. The approval of extensions to sites could affect the local amenity and the wellbeing of the local people in the short term through negative visual effects as well as increased noise, dust and traffic (especially with HGVs) derived from mineral activities. Extensions would mean that existing communities, neighbouring land uses and visitors to West Sussex would continue to be subjected to negative effects. As such, a minor negative effect is identified for this SA objective. However, effects will be uncertain as the potential for effects will depend on the exact nature and design of the extensions to sites, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but these options are unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible,	+/-?	+/-?	C +/-?	C +/-?	Both policy options (CH1 and CH2) could have minor negative effects on this SA objective as small scale sites and extensions that could come forward under these

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CH1	CH2	CH1	CH2	
enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).					<p>policy options could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of sites and so a minor positive effect is also identified. Therefore, both options are likely to have mixed, minor positive and minor negative effects on this SA objective. However, 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.</p> <p>Both policy options (CH1 and CH2) could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	+	N/A	N/A	<p>Both policy options (CH1 and CH2) provide support to new sites, thereby making a positive contribution to the local economy via new jobs and/or continuing to support existing jobs. Therefore minor positive effects are expected on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this option is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	+/-	S -	S -	<p>Both policy options (CH1 and CH2) are likely to have minor positive effects on this SA objective as sites permitted under the policy options will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as permitted sites will not reduce the extraction of virgin materials. Therefore, the policy options are likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CH1	CH2	CH1	CH2	
					supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	+/-?	C +/-?	C +/-?	<p>Both policy options (CH1 and CH2) are likely to have minor positive effects on this SA objective as in the long term the restoration of potential small scale sites and extensions to sites could lead to positive effects for the landscape via the restoration of sites. Furthermore, preference would be given to sites outside of the South Downs National Park. However, minor negative effects are also expected as sites to come forward under these criteria-based policies could result in landscape impacts in the short/long term. The effects would be 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.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for both policy options (CH1 and CH2) in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	-?	P -? R -? C -?	P -? R -? C -?	<p>Both policy options (CH1 and CH2) could potentially lead to minor negative effects for biodiversity, as proposals for potential small scale sites and extensions to sites could have potential impacts on designated sites, protected species or habitats. Therefore, minor negative effects are expected for this SA objective. The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for these options in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	+/-?	C +/-?	C +/-?	Both policy options (CH1 and CH2) could potentially lead to minor negative effects for geodiversity, as proposals for potential small scale sites and extensions to sites could lead to potential impacts due to the potential to uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CH1	CH2	CH1	CH2	
					<p>preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, mixed minor negative and positive effects are expected for this SA objective. 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.</p> <p>Mixed minor positive and negative uncertain effects are considered likely for these policy options in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	++/-?	++/-?	C ++/-?	C ++/-?	<p>Both policy options (CH1 and CH2) provide support to the development of new sites. Sites permitted by these policy options could help conserve the historic environment in West Sussex and maintain its local distinctiveness, as the chalk worked in the sites could be used as restorative and conservation material (for example in the crypt of Chichester Cathedral), thereby contributing to conserving and enhancing West Sussex's historic environment. Sites permitted by the policy options may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the proposed policy options 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. Therefore, the policy options are likely to have uncertain, mixed significant positive/minor negative effects on this SA objective. 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.</p> <p>Mixed, significant positive and minor negative uncertain effects are considered likely for these policy options in relation to Cultural ecosystem services.</p>
9. To protect and, where possible,	-?	-?	R -?	R -?	The exact land take and location of sites, that could come forward under both

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CH1	CH2	CH1	CH2	
enhance soil quality, and minimise the loss of best and most versatile land.					<p>policy options (CH1 and CH2), and whether loss of high quality agricultural land or 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.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	-?	R -?	R -?	<p>Both policy options (CH1 and CH2) may potentially result in new sites coming forward. The working of these sites will result in traffic movements and their associated emissions. Therefore, minor negative effects are likely for this SA objective. However, the policy options state that preference would be given to sites/extensions close to the Advisory Lorry Route, and also levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	?	R ?	R ?	<p>Both policy options (CH1 and CH2) may lead to sites coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of these policy options on Regulating ecosystem services are uncertain at this stage.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CH1	CH2	CH1	CH2	
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	0?	R 0?	R 0?	<p>Neither policy option (CH1 or CH2) is 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 chalk sites are unlikely to be located in (due to the nature of the geological resource). However, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the chalk sites, which would not be known until the planning application stage.</p> <p>These policy options are considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	-?	R -?	R -?	<p>Both policy options (CH1 and CH2) may potentially result in new sites coming forward. The working of these sites would increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. This is unlikely to change due to the high capital costs of rail infrastructure. Therefore, minor negative effects are likely for this SA objective. However, the policy options state that preference would be given to sites/extensions close to the Advisory Lorry Route, and routing and traffic movements will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+	+	R +?	R +?	<p>Both policy options (CH1 and CH2) may potentially result in new sites coming forward. This will therefore have minor positive effects on reducing the emission of greenhouse gases as they support the supply of chalk from within West Sussex. This therefore potentially reduces the need for additional importation into West</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	CH1	CH2	CH1	CH2	
					<p>Sussex. However, to what degree this will reduce the need for imported material is uncertain. Furthermore, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor positive uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>

Consolidated Bedrock (e.g. Sandstone) – ST1

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Building stone sites are typically small scale operations and are less intensive than aggregates quarries. Therefore, effects 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, well-being and amenity of people living and working in, and visiting West Sussex are likely to be minor. Therefore, a minor negative effect is expected for 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 sites, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this option is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>The option may permit sites which could have both potential negative and positive effects on recreation opportunities (e.g. Public Rights of Way) by restricting access to or affecting the amenity of users. However, sites considered against this option could provide positive effects through restoration opportunities for recreation. Therefore, this option is likely to have mixed, minor positive and 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 sites, which would not be known until the planning application stage.</p> <p>The option could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>The option provides support to specific sites and extensions to existing sites where they accord with the criteria-based policy, thereby making a positive contribution to the local economy via new jobs/continued employment. Therefore a minor positive effect is expected on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this option is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>This option is likely to have minor positive effects on this SA objective as building stone sites permitted under a criteria-based policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as sites permitted under a criteria-based policy will not reduce the extraction of virgin materials. Therefore, the policy option is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>The option could potentially lead to negative effects for landscape and landscape character, as new specific sites and/or extensions to existing sites could negatively impact on the landscape. However, the option states that the criteria-based policy would give preference to sites outside the AONB and National Park unless no suitable alternatives are available, thereby giving protection to key landscape designations in West Sussex.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Furthermore, the use of natural stone within elements of the local built environment has helped define the special qualities of landscape designations. The option 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 building stones could protect and enhance the local landscape and setting of designations.</p> <p>Therefore, this option is likely to have mixed, minor positive and minor negative effects on this SA objective. 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.</p> <p>Mixed, minor positive and minor negative uncertain effects are also considered likely for this option in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>The option could potentially lead to negative effects for biodiversity, as proposals for specific sites and extensions to existing sites could have potential impacts on designated sites, protected species or habitats. Therefore, a minor negative effect is expected for this SA objective. The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for this option in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>The option may lead to minor negative effects as proposals for specific sites and extensions to existing sites may uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, a mixed minor negative and positive effect is expected for this SA objective. However,</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>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.</p> <p>Mixed minor positive and negative uncertain effects are considered likely for this option in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	++/-?	C ++/-?	<p>The option provides support to the development of specific sites and extensions to existing sites via a criteria-based policy. These sites could help conserve the historic environment in West Sussex and maintain its local distinctiveness, in some cases conserving buildings using similar, local stone, thereby conserving and enhancing West Sussex's historic environment. Sites permitted by the policy may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the proposed 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. Therefore, the option is likely to have uncertain, mixed significant positive/minor negative effects on this SA objective. 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.</p> <p>Mixed, significant positive and minor negative uncertain effects are considered likely for this option in relation to Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	<p>This option and its criteria based policy is likely to permit smaller sites compared to aggregate sites but nonetheless may still result in the loss of best and most versatile land, although this will depend on the criteria included in the policy. Furthermore, the exact land take and location, and whether loss of high quality agricultural land or improvements to soil</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>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.</p> <p>Minor negative uncertain effects are considered likely for this option in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+/-?	R +/-?	<p>Building stone sites that are specific sites or extensions to existing sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated traffic movements and their associated emissions. However, the option states that the criteria-based policy will require sites to be well located to the Advisory Lorry Route. Furthermore, the levels of traffic associated with building stone sites is less than other mineral workings due to the lower annual tonnages worked, which means the level of emissions would be lower than for other types of mineral extraction sites. Therefore, this option is likely to have mixed minor positive, minor negative effects on this SA objective. The exact location of proposals and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Mixed, minor positive and minor negative uncertain effects are considered likely for this option in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>While this option of a criteria-based policy may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the building stone site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of this option on Regulating ecosystem services are uncertain at</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			this stage.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>The option 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 building stone sites are unlikely to be located in. However, this would not be known until the planning application stage.</p> <p>The option is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+/-?	R +/-?	<p>Building stone sites that are specific sites or extensions to existing sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated lorry traffic movements. However, the option states that the criteria-based policy will require sites to be well located to the Advisory Lorry Route. Furthermore the levels of lorry traffic associated with building stone sites are less than other mineral workings due to the lower annual tonnages worked. Therefore, this option is likely to have mixed minor positive, minor negative effects on this SA objective. 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.</p> <p>Mixed, minor positive and minor negative uncertain effects are considered likely for this option in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+?	+	<p>This option will have minor positive effects on reducing the emission of greenhouse gases as it supports specific sites or extensions to existing sites that will work local building stone to maintain local distinctiveness and the repair of heritage assets. This therefore supports local stone for local need, potentially reducing the need for the importation of stone into West Sussex. However, to what degree this will reduce the need for imported stone is uncertain. Furthermore, at this stage in the planning process it is not possible to determine the impacts of policy options on</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor positive uncertain effects are considered likely for this option in relation to Regulating ecosystem services.</p>

Oil and Gas

SA Objective and Sub Questions	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	OG1	OG2	OG1	OG2	
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	-?	N/A	N/A	<p>Both policy options (OG1 and OG2) support the location of headworks associated with oil and gas in accordance with identified areas of search, and the use of criteria based policies for conventional and unconventional oil and gas development. Many of the potential impacts on the local amenity, health and wellbeing of local people (e.g. dust, pollution) would not be that dissimilar to most mineral operations. Also, while operations are likely to be intensive, they are likely to be short term, especially during exploration stages. New developments could potentially mean new communities, neighbouring land uses and visitors to West Sussex are negatively affected. As such, minor negative effects are identified for this SA objective. However, effects will be uncertain as the potential for effects will depend on the exact nature, design and location of the headworks/developments, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but these options are unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-?	-?	C -?	C-?	<p>Both policy options (OG1 and OG2) could have minor negative effects on this SA objective as developments that could come forward under these policy options could impact upon the amenity of users of PROW or others users of the countryside in the area. Developments are also unlikely to meaningfully protect or enhance recreation opportunities, particularly due to their small scale and more temporary/short term nature. However, effects will be uncertain as the potential for effects will depend on the exact nature, design and location of the headworks/developments, which would not be known until the planning application stage.</p>

SA Objective and Sub Questions	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	OG1	OG2	OG1	OG2	
					Both policy options (OG1 and OG2) could have minor negative uncertain effects on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	+	N/A	N/A	<p>Oil and gas play an important role in the UK economy and further exploitation will help to ensure a secure and diverse supply chain. Both policy options (OG1 and OG2) provide support to new headworks and developments, thereby making a positive contribution to the local economy via new jobs and potentially locally based skills. They are also unlikely to affect tourists' decisions to visit relevant areas. Therefore minor positive effects are expected on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this option is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	+/-	S -	S -	<p>Both policy options (OG1 and OG2) are likely to have minor positive effects on this SA objective as developments permitted under the policy options will not be classed as inappropriate development, as they are contributing to the extraction and supply of resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as permitted developments will not reduce the extraction of finite hydrocarbons. Therefore, the policy options are likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the	+/-?	++/-?	C +/-?	C ++/-?	Policy option OG1 is likely to have minor negative effects for landscape and landscape character, as the policy option could result in permitting headworks

SA Objective and Sub Questions	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	OG1	OG2	OG1	OG2	
landscape, local distinctiveness and landscape character in West Sussex.					<p>and developments that could result in landscape impacts. However, it is likely that sites will be relatively contained and small scale, and where they are potentially proposed in designated areas (e.g. SDNP and AONBs) the exceptional circumstances and public interest tests would have to be met. The policy option could also result in minor positive effects as in the long term the restoration of potential developments could lead to positive effects for the landscape via restoration. Therefore, this option is likely to have mixed minor positive, minor negative effects on this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the headworks/developments, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for policy option OG1 in relation to Cultural ecosystem services.</p> <p>Similar to policy option OG1, policy option OG2 is likely to have minor negative effects for landscape and landscape character, as the policy option could result in permitting headworks and developments that could result in landscape impacts. However, it is likely that sites will be relatively contained and small scale, and where they are potentially proposed in designated areas (e.g. SDNP and AONBs) for conventional hydrocarbons, the exceptional circumstances and public interest tests would have to be met. The policy option could also result in significant positive effects as in the long term the restoration of potential developments could lead to positive effects for the landscape via restoration. Furthermore, a separate area of search is proposed for unconventional oil and gas which excludes protected areas as defined in the draft Onshore Hydraulic Fracturing (Protected Areas) Regulations 2015, which includes National Parks and AONBs. Therefore, this option is likely to have mixed significant positive, minor negative effects on this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of</p>

SA Objective and Sub Questions	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	OG1	OG2	OG1	OG2	
					<p>the headworks/developments, which would not be known until the planning application stage.</p> <p>Mixed significant positive and minor negative uncertain effects are considered likely for policy option OG2 in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	-?	P -? R -? C -?	P -? R -? C -?	<p>Both policy options (OG1 and OG2) could potentially lead to minor negative effects for biodiversity, as developments could have potential impacts not too dissimilar to most mineral operations (e.g. transport, noise, lighting, dust, and pollution) which could negatively affect designated sites, protected species or habitats. Therefore, minor negative effects are expected for this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the headworks/developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for these options in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	-?	-?	C -?	C -?	<p>Both policy options (OG1 and OG2) could potentially lead to minor negative effects for geodiversity, as proposals for potential developments could lead to potential impacts due to the potential to uncover and harm geological interests, and there is unlikely to be the potential to contribute to geodiversity by conserving geological features. Therefore, minor negative effects are expected for this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the headworks/developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Cultural ecosystem services.</p>

SA Objective and Sub Questions	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	OG1	OG2	OG1	OG2	
8. To conserve, and where possible, enhance the historic environment.	-?	-?	C -?	C -?	<p>Both policy options (OG1 and OG2) may lead to minor negative effects on the historic environment (e.g. archaeology), heritage assets and their setting as operations associated with permitted developments can be intensive, due to the methods of working (i.e. drilling, water usage at high pressure, traffic volumes). There is also unlikely to be the potential for developments to uncover and help preserve historic features or findings thereby not being able to contribute towards conserving and enhancing West Sussex's historic environment. Therefore, minor negative effects are expected for this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the headworks/developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Cultural ecosystem services</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	-?	R -?	R -?	<p>The exact land take and location of developments, that could come forward under both policy options (OG1 and OG2), and whether loss of high quality agricultural land or 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.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	-?	R -?	R -?	<p>Both policy options (OG1 and OG2) could result in permission for developments that are likely to involve flaring of gas, and substantial amounts of transport movements due to the transport of water used in operations and the transportation of extracted oil and gas. This may lead to impacts on air quality. Therefore, minor negative effects are expected for this SA objective. However,</p>

SA Objective and Sub Questions	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	OG1	OG2	OG1	OG2	
					the effects would be minor and uncertain as the potential for effects will depend on the exact nature, scale, design and location of the headworks/developments, which would not be known until the planning application stage.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	?	R ?	R ?	<p>Both policy options (OG1 and OG2) may lead to developments coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, although policy option OG2 excludes protected areas from areas of search for unconventional oil and gas developments, which includes protected groundwater source areas. However, at this stage in the planning process it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the development proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of these policy options on Regulating ecosystem services are uncertain at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	0?	R 0?	R 0?	<p>Neither policy option (OG1 or OG2) is 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 unconventional and conventional oil and gas development is unlikely to be located in. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the headworks/developments, which would not be known until the planning application stage.</p> <p>These policy options are considered unlikely to have any effect on Regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	OG1	OG2	OG1	OG2	
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	-?	R -?	R -?	<p>Both policy options (OG1 and OG2) may potentially result in new developments coming forward, which are likely to have minor negative effects on this SA objective. As the levels of lorry traffic associated with developments can be substantial due to the transport of water used in operations and the transportation of extracted oil and gas. However, the location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	-?	-?	R -?	R -?	<p>Both policy options (OG1 and OG2) may potentially result in new developments coming forward, which are likely to have minor negative effects on this SA objective. As developments may potentially involve substantial amounts of lorry traffic and the location of developments within West Sussex are unlikely to reduce transport distances. Also extracted oil and gas is unlikely to predominantly serve local markets unlike other minerals (e.g. consolidated bedrock and sharp sand and gravel), thereby requiring the continuation of imports. This is therefore unlikely to reduce the emissions of greenhouse gases. Furthermore, the operation of developments, especially during exploration can involve flaring. However, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for these policy options in relation to Regulating ecosystem services.</p>

Minerals Resource Safeguarding Options

Mineral Safeguarding Policy Intention (for Sand and Gravel, Clay, Chalk, Consolidated Bedrock (Building Stone))

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	N/A	<p>Mineral Safeguarding Areas may potentially restrict non-mineral developments that could otherwise have a negative effect on the health, wellbeing and amenity of people. However, the Safeguarding Areas may lead to more mineral extraction 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.</p> <p>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 Safeguarding Areas, which will not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy intention is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way	+/-?	C +/-?	<p>Mineral Safeguarding Areas supported by the policy intention may potentially restrict non-mineral developments that could otherwise have a negative effect on recreation (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) that could have a detrimental impact on recreation 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. 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
(PROW).			<p>within Safeguarding Areas, which will not be known until the planning application stage.</p> <p>The policy intention could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	++/-	N/A	<p>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 West Sussex. Mineral Safeguarding Areas should help safeguard mineral resources from sterilisation and may therefore have a positive effect on economic development related to minerals. However, as non-mineral developments may potentially be restricted within Mineral Safeguarding Areas, the proposed policy could also have negative effects on economic development, as Safeguarding Areas may reduce 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 intention is likely to have mixed significant positive and minor negative effects on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy intention is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	S -	<p>The policy intention is likely to have significant positive effects on this SA objective, as it 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 planning decisions.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>Mineral Safeguarding Areas supported by the policy intention may have minor positive effects on landscape, as the potential restriction 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 extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) 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 be 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 Safeguarding Areas, which for some will not be known until the planning application stage.</p> <p>The policy intention could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	P +? R +? C +?	<p>Mineral Safeguarding Areas supported by the policy intention may have minor positive effects on biodiversity, as the potential restriction of non-mineral development in Safeguarding Areas that would prejudice mineral workings may prevent development that could harm biodiversity. Also, should areas within Safeguarding Areas be used for mineral extraction in the future, long-term biodiversity benefits could occur 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.</p> <p>The policy intention is considered likely to have minor positive uncertain effects in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
7. To protect and conserve geodiversity.	++?	C ++?	<p>Mineral Safeguarding Areas should have significant positive effects with regard to the protection of geodiversity, 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.</p> <p>The policy intention is considered likely to have significant positive uncertain effects in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>Mineral Safeguarding Areas supported by the policy intention 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) that would have a detrimental impact on the historic environment. 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 Safeguarding Areas, which will not be known until the planning application stage.</p> <p>The policy intention could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Soil/land quality is unlikely to be affected by the policy intention for Mineral Safeguarding Areas, therefore no effect is expected for this SA objective.</p> <p>This policy option is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to	0	R 0	<p>Air quality is unlikely to be affected by the policy intention for Mineral Safeguarding Areas,</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
protect and, where possible, enhance air quality.			therefore no effect is expected for this SA objective. This policy option is considered unlikely to have any effect on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Water resources, water quality and the function of the water environment is unlikely to be affected by the policy intention for Mineral Safeguarding Areas, therefore no effect is expected for this SA objective. This policy option is considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Flooding is unlikely to be affected by the policy intention for Mineral Safeguarding Areas, therefore no effect is expected for this SA objective. This policy option is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+/-?	R +/-?	Mineral Safeguarding Areas supported by the policy intention may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential 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) that could have a detrimental impact due to the adverse impacts of lorry traffic. Overall, a mixed minor positive/minor negative effect is likely 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

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>the exact nature and design of proposals within Safeguarding Areas, which will not be known until the planning application stage.</p> <p>The policy intention could have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R0	<p>Greenhouse gases are unlikely to be affected by the policy intention for Mineral Safeguarding Areas, therefore no effect is expected for this SA objective.</p> <p>This policy option is considered unlikely to have any effect on Regulating ecosystem services.</p>

Minerals Infrastructure Safeguarding Options

Oil and Gas – SMI/E1

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	N/A	<p>This policy option may potentially 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, safeguarding all existing sites will ensure that all existing onshore hydrocarbon production facilities continue to operate unaffected by incompatible developments, which may therefore prolong any existing</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>impacts on the health and wellbeing of people. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. 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 existing onshore hydrocarbon production facilities.</p> <p>Protection of health and wellbeing would be supported by all ecosystem services, but is unlikely to have a particular impact on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>This policy option may potentially restrict non-mineral developments that could otherwise have a negative effect on access to the countryside, open spaces and Public Rights of Way. However, the policy option will ensure that existing onshore hydrocarbon production facilities will continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on access to the countryside, open spaces and Public Rights of Way. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. 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 existing onshore hydrocarbon production facilities.</p> <p>The policy option could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	++/-	N/A	<p>Oil and gas are essential in supporting sustainable economic growth. It is therefore important that there is a sufficient supply in order to provide the energy that the country needs, including locally for West Sussex. Safeguarding existing onshore hydrocarbon production facilities should help safeguard 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 by safeguarding existing onshore hydrocarbon production facilities, the policy option could also have negative effects on employment opportunities. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. Therefore, this policy is likely to have mixed significant positive/minor negative effects on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	S -	<p>This policy option is likely to have a significant positive effect on this SA objective, as it ensures that existing onshore hydrocarbon production facilities will be safeguarded from incompatible development, and ensure that existing onshore hydrocarbon production facilities will be adequately and effectively considered in all land-use planning decisions.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>This policy option may have minor positive effects on landscape, as the potential restriction of incompatible development in safeguarding any existing sites that would prejudice mineral workings may prevent development that could negatively impact on the landscape. However, safeguarding any existing sites will ensure that existing onshore hydrocarbon production facilities continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on landscape. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. 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 existing onshore hydrocarbon production facilities within safeguarding areas.</p> <p>The policy option could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	P +? R +? C +?	<p>This policy option may have minor positive effects on biodiversity, as the potential restriction of incompatible development in safeguarding areas that would prejudice mineral workings may prevent development that could harm biodiversity. Also, areas used for mineral activity within the safeguarded existing sites, in the long-term, could benefit biodiversity as a result of the restoration of oil and gas sites. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. However, any effects would be uncertain as the potential for effects will depend on the exact nature</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>and design of existing onshore hydrocarbon production facilities within safeguarding areas.</p> <p>The policy option is considered likely to have minor positive uncertain effects in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Safeguarding existing onshore hydrocarbon production facilities is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy option is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>This policy may potentially restrict non-mineral developments that could otherwise have a negative effect on the historic environment, heritage assets and their setting. However, safeguarding any existing sites that would prejudice mineral workings will ensure that existing onshore hydrocarbon production facilities continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on the historic environment. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. 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 existing onshore hydrocarbon production facilities within safeguarding areas.</p> <p>The policy option could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Safeguarding existing onshore hydrocarbon production facilities is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy option is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Safeguarding existing onshore hydrocarbon production facilities is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy option is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Safeguarding existing onshore hydrocarbon production facilities is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy option is considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Safeguarding existing onshore hydrocarbon production facilities is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy option is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of	+/-?	R +/-?	<p>This policy option may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential adverse impacts of lorry traffic. However, the safeguarding areas will ensure that existing onshore hydrocarbon</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
the Lorry Route Network.			<p>production facilities 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. It must be emphasised, however, that the process of safeguarding or the designation of Mineral Consultation Areas does not mean that non-mineral development cannot take place, as the policy option also states that it could allow redevelopment under certain circumstances. 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.</p> <p>The policy option could have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Safeguarding existing onshore hydrocarbon production facilities is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy option is considered unlikely to have any effect on Regulating ecosystem services.</p>

Importation Infrastructure (Wharves)

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	+/-?	+/-?	+/-?	N/A	N/A	N/A	N/A	<p>All four policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the health, wellbeing and amenity of people and/or conflict with the existing minerals operations. However, the approach to safeguarding for the four policy options will ensure that operational wharves, non-operational wharves and/or existing terminals to provide additional capacity continue 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 new or extensions to existing sites does not mean 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 existing and new wharf operations.</p> <p>Protection of health and wellbeing would be supported by all ecosystem services, but is unlikely to have a particular impact on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the	+/-?	+/-?	+/-?	+/-?	C +/-?	C +/-?	C +/-?	C +/-?	<p>All four policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on recreation opportunities. However, the policy options will ensure that wharf operations continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on recreation opportunities. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for</p>

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
countryside, open spaces and Public Rights of Way (PROW).									<p>this SA objective. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of existing and new wharf operations.</p> <p>The policy options could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	++/ --	++/-	++/-	++/-	N/A	N/A	N/A	N/A	<p>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 West Sussex. Safeguarding operational wharves, non-operational wharves and/or existing terminals should help safeguard importation 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 by safeguarding importation infrastructure via these policy options, the proposed policy options could also have negative effects on employment opportunities. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place. Overall, policy options W2, W3 and W4 are likely to have mixed significant positive and minor negative effects for this SA objective.</p> <p>Policy option W1 is likely to have mixed significant positive and significant negative effects on this SA objective, similar to policy options W2, W3 and W4 for the same reasons as outlined above. However, policy option W1 involves identifying all wharves in West Sussex currently used for the landing of minerals and safeguarding them. While this option provides the</p>

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
									<p>most flexible approach in terms of the capacity safeguarded it would inhibit the maximum amount of other development (such as housing) from coming forward at minerals wharves due to currently operational wharves being located on the Western Harbour Arm. This could lead to significant negative effects on the local economy as the ambition of the Shoreham Joint Area Action Plan (JAAP) is for regeneration to take place on the Western Harbour Arm of Shoreham. Policy options W2, W3 and W4 are not expected to affect the regeneration plans of the JAAP, as the wharves safeguarded via these options will allow the aspirations of the JAAP to be met.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	++	++	++	S -	S -	S -	S -	<p>While all four policy options propose to safeguard different capacities, the safeguarded capacities will all result in a surplus of capacity based on the highest demand for aggregates being landed at the wharves. Therefore, all options would provide sufficient capacity for a steady and adequate supply. Furthermore, safeguarding operational wharves, non-operational wharves and/or existing terminals will not be classed as inappropriate development, as they are contributing to the supply of mineral resources, not limiting the ability to extract or supply resources. Therefore, significant positive effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	+/-?	+/-?	+/-?	C +/-?	C +/-?	C +/-?	C +/-?	<p>All four policy options may have minor positive effects, as the potential restriction of incompatible development by safeguarding operational wharves, non-operational wharves and/or existing terminals may prevent non-minerals development that could negatively impact on the landscape. However, the approach to safeguarding importation infrastructure via these policy options will ensure that they continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on the landscape. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean 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 existing and new wharf operations.</p> <p>The policy options could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	+?	+?	+?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	P +? R +? C +?	<p>All four policy options may have minor positive effects on biodiversity, as the potential restriction of incompatible development in Safeguarding Areas that would prejudice importation infrastructure may prevent development that could harm biodiversity. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean 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 existing and new wharf operations.</p> <p>The policy options are considered likely to have minor positive uncertain effects in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
7. To protect and conserve geodiversity.	0	0	0	0	C 0	C 0	C 0	C 0	<p>Safeguarding operational wharves, non-operational wharves and/or existing terminals is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options are considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	+/-?	+/-?	+/-?	C +/-?	C +/-?	C +/-?	C +/-?	<p>All four policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the historic environment, heritage assets and their setting, by safeguarding operational wharves, non-operational wharves and/or existing terminals. However, the approach to safeguarding importation infrastructure via these policy options will ensure that they continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on the historic environment. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean 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 existing and new wharf operations.</p> <p>The policy options are likely to have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and	0	0	0	0	R 0	R 0	R 0	R 0	<p>Safeguarding operational wharves, non-operational wharves and/or existing terminals is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options are considered unlikely to have any effect on Regulating ecosystem services.</p>

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
most versatile land.									
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+?	+?	+?	+?	R +?	R +?	R +?	R +?	<p>All four policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential increases in air pollution as a result of lorry traffic. Furthermore, safeguarding operational wharves, non-operational wharves and/or existing terminals will help safeguard infrastructure that will help to minimise the transport of minerals by roads, thereby reducing air pollution. Therefore minor positive effects are 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 existing and new wharf operations. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place.</p> <p>The policy options are likely to have minor positive uncertain effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	0	0	0	R 0	R 0	R 0	R 0	<p>Safeguarding operational wharves, non-operational wharves and/or existing terminals is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options are considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce	0	0	0	0	R 0	R 0	R 0	R 0	Safeguarding operational wharves, non-operational wharves and/or

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
vulnerability to flooding, in particular preventing inappropriate development in the floodplain.									<p>existing terminals is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options are considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+?	+?	+?	+?	R +?	R +?	R +?	R +?	<p>All four policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential adverse impacts of lorry traffic. Furthermore, safeguarding operational wharves, non-operational wharves and/or existing terminals will help safeguard importation infrastructure that will help to minimise the transport of minerals by roads. Therefore a minor positive 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 existing and new wharf operations. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place.</p> <p>The policy options are likely to have minor positive uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+?	+?	+?	+?	R +?	R +?	R +?	R +?	<p>All four policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on emissions of greenhouse gases. Furthermore, safeguarding operational wharves, non-operational wharves and/or existing terminals will help safeguard importation infrastructure that will help to minimise the transport of minerals by roads, thereby potentially reducing the emissions of greenhouse gases. Overall, a</p>

SA Objective	SA Score				Will achievement of the SA objective have a benefit or impact on particular ecosystem services?				Justification
	W1	W2	W3	W4	W1	W2	W3	W4	
									<p>minor positive 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 existing and new wharf operations. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place.</p> <p>The policy options could have minor positive uncertain effects on Regulating ecosystem services.</p>

Importation Infrastructure (Railheads)

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	RH1	RH2	RH1	RH2	
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	+/-?	N/A	N/A	<p>Both policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the health, wellbeing and amenity of people and/or conflict with the existing minerals operations. However, the approach to safeguarding for both policy options will ensure that railhead importation infrastructure can operate unaffected by incompatible developments, which may therefore prolong any existing impacts on the health and wellbeing of people. Furthermore, policy option RH2 supports extensions to existing railheads which may affect additional residents and neighbouring land uses. However, this is unlikely to give rise to significant impacts due to the type of operations and the mitigation that would be in place on sites. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place. Overall, mixed minor positive/minor negative effects are 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 existing and any new railhead operations.</p> <p>Protection of health and wellbeing would be supported by all ecosystem services, but is unlikely to have a particular impact on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public	+/-?	+/-?	C +/-?	C +/-?	<p>Both policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on recreation opportunities. However, the policy options will ensure that railhead operations continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on recreation opportunities. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. However, any</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	RH1	RH2	RH1	RH2	
Rights of Way (PROW).					<p>effects would be uncertain as the potential for effects will depend on the exact nature and design of existing and new railhead operations.</p> <p>The policy options could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	++/-	++/--	N/A	N/A	<p>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 West Sussex. Safeguarding currently operational railheads, increasing capacity or safeguarding non-operational railheads should help safeguard importation 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 by safeguarding importation infrastructure via these policy options, the proposed policy options could also have negative effects on employment opportunities. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place.</p> <p>Overall, policy option RH1 is likely to have mixed significant positive and minor negative effects for this SA objective. However, policy option RH2 is likely to have mixed significant positive and significant negative effects for this SA objective. Policy option RH2 is likely to have significant negative effects as it supports increasing capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads. This may result in restricting more non-minerals development than policy option RH1 which may result in greater impacts on the local economy.</p> <p>Protection of the local economy would be supported in particular by Provisioning</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	RH1	RH2	RH1	RH2	
					ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	++	S -	S -	<p>Policy options RH1 and RH2 will conserve mineral transportation hubs from inappropriate development whilst also ensuring the supply of aggregates into West Sussex meets current and future needs. Significant positive effects are therefore likely on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	+/-?	C +/-?	C +/-?	<p>Both policy options may have minor positive effects, as the potential restriction of incompatible development by safeguarding railhead infrastructure may prevent non-minerals development that could negatively impact on the landscape. However, the approach to safeguarding importation infrastructure via these policy options will ensure that they continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on the landscape. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean 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 existing and new railhead operations.</p> <p>The policy options could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	RH1	RH2	RH1	RH2	
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	+	P +? R +? C +?	P +? R +? C +?	Both policy options may have minor positive effects on biodiversity, as the potential restriction of incompatible development in safeguarding areas that would prejudice importation infrastructure may prevent development that could harm biodiversity. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean 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 existing and new railhead operations. The policy options are considered likely to have minor positive uncertain effects in relation to Provisioning, Regulatory and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	0	C 0	C 0	Maintaining current capacity by safeguarding all currently operational railheads, increasing capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective. The policy options are considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	+/-?	+/-?	C +/-?	C +/-?	Both policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the historic environment, heritage assets and their setting, by safeguarding railhead infrastructure. However, the approach to safeguarding importation infrastructure via these policy options will ensure that they continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on the historic environment. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place. Overall, a mixed effect, minor positive/minor negative is

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	RH1	RH2	RH1	RH2	
					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 existing and new railhead operations. The policy options are likely to have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	0	R 0	R 0	Maintaining current capacity by safeguarding all currently operational railheads, increasing capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective. The policy options are considered unlikely to have any effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	+	R +	R +	Both policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential increases in air pollution as a result of lorry traffic. Furthermore, safeguarding railhead infrastructure will help to minimise the transport of minerals by roads, thereby reducing air pollution. Therefore minor positive effects are 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 existing and new railhead operations. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place. The policy options are likely to have minor positive uncertain effects on Regulating ecosystem services.

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	RH1	RH2	RH1	RH2	
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	0	R 0	R 0	Maintaining current capacity by safeguarding all currently operational railheads, increasing capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective. The policy options are considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	0	R 0	R 0	Maintaining current capacity by safeguarding all currently operational railheads, increasing capacity by encouraging extensions to currently operational railheads, or safeguarding non-operational railheads is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective. The policy options are considered unlikely to have any effect on Cultural ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+?	+?	R +?	R +?	Both policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential adverse impacts of lorry traffic. Furthermore, safeguarding railhead infrastructure will help to minimise the transport of minerals by roads. Therefore a minor positive 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 existing and new railhead operations. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place. The policy options are likely to have minor positive uncertain effects on Regulating

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	RH1	RH2	RH1	RH2	
					ecosystem services.
14. To reduce the emissions of greenhouse gases.	+?	+?	R +?	R +?	<p>Both policy options may potentially restrict non-mineral developments that could otherwise have a negative effect on emissions of greenhouse gases. Furthermore, safeguarding railhead infrastructure will help to minimise the transport of minerals by roads, thereby potentially reducing the emissions of greenhouse gases. Overall, a minor positive 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 existing and new railhead operations. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that non-mineral development cannot take place.</p> <p>The policy options could have minor positive uncertain effects on Regulating ecosystem services.</p>

Other production infrastructure

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	PI1	PI2	PI1	PI2	
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	+/-?	N/A	N/A	<p>Both policy options PI1 and PI2 may potentially restrict non-mineral developments that could otherwise have a negative effect on the health, wellbeing and amenity of people and/or conflict with the existing minerals operations. However, safeguarding all existing and planned sites will ensure that other production 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 new or extensions to existing sites does not mean 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 other production infrastructure within planned or existing sites.</p> <p>Protection of health and wellbeing would be supported by all ecosystem services, but is unlikely to have a particular impact on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	+/-?	C +/-?	C +/-?	<p>Both policy options PI1 and PI2 may potentially restrict non-mineral developments that could otherwise have a negative effect on access to the countryside, open spaces and Public Rights of Way. However, the policy options will ensure that other production infrastructure will continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on access to the countryside, open spaces and Public Rights of Way. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure 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</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	PI1	PI2	PI1	PI2	
					<p>design of other production infrastructure within planned or existing sites.</p> <p>The policy options (PI1 and PI2) could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	++/-	++/-	N/A	N/A	<p>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 West Sussex. Safeguarding all existing and planned sites should help safeguard other production 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 by safeguarding existing or planned sites for other mineral production activities, the proposed policy could also have negative effects on employment opportunities. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure will be automatically allowed or that non-mineral development cannot take place. Therefore, overall policies PI1 and PI2 are likely to have mixed significant positive/minor negative effects on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the	++	++	S -	S -	<p>Policy options PI1 and PI2 are likely to have significant positive effects on this SA objective, as existing and planned sites which are safeguarded will not be classed as inappropriate development, as they are contributing to the supply of mineral resources and products for the needs of society, not limiting the ability to extract or supply</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	PI1	PI2	PI1	PI2	
supply of aggregates and other minerals sufficient for the needs of society.					resources. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	++/-?	C +/-?	C ++/-?	<p>Policy option PI1 may have minor positive effects on landscape, as the potential restriction of incompatible development by safeguarding existing and planned sites may prevent non-minerals development that could negatively impact on the landscape. However, safeguarding any existing and planned sites will ensure that other production infrastructure continues to operate unaffected by incompatible developments, which may therefore prolong existing impacts on landscape. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure 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 other production infrastructure within safeguarding areas.</p> <p>Policy option PI1 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p> <p>Policy option PI2 would be expected to have the same positive and negative effects as identified above, but the minor positive effect would be significant, as policy option PI2 would help ensure that impacts on the South Downs National Park would be reduced and may be avoided altogether, as the policy option does not propose to safeguard infrastructure within the National Park.</p> <p>Policy option PI2 could have mixed significant positive and minor negative uncertain</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	PI1	PI2	PI1	PI2	
					effects on Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	+	P +? R +? C +?	P +? R +? C +?	<p>Policy options PI1 and PI2 may have minor positive effects on biodiversity, as the potential restriction of incompatible development in Safeguarding Areas that would prejudice production infrastructure may prevent development that could harm biodiversity. Also, areas used for mineral activity within the safeguarded existing and planned sites, in the long-term, could benefit biodiversity as a result of the restoration of sites. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure 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 other production infrastructure within safeguarding areas.</p> <p>The policy options (PI1 and PI2) are considered likely to have minor positive uncertain effects in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	0	C 0	C 0	<p>Safeguarding any existing and planned sites within in or outside the boundary of the National Park is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options (PI1 and PI2) are considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	+/-?	C +/-?	C +/-?	<p>Policy options PI1 and PI2 may potentially restrict non-mineral developments that could otherwise have a negative effect on the historic environment, heritage assets and their setting, by safeguarding existing and planned production infrastructure sites. However, safeguarding existing and planned sites will ensure that other production infrastructure continue to operate unaffected by incompatible developments, which may therefore</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	PI1	PI2	PI1	PI2	
					<p>prolong existing impacts on the historic environment. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure 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 other production infrastructure within safeguarding areas.</p> <p>The policy options (PI1 and PI2) are likely to have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	0	R 0	R 0	<p>Safeguarding any existing and planned sites within in or outside the boundary of the National Park is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options (PI1 and PI2) are considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+/-?	+/-?	R +/-?	R +/-?	<p>Policy options PI1 and PI2 may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to increases in air pollution as a result of lorry traffic. However, the Safeguarding Areas will ensure that existing minerals production infrastructure continue to operate unaffected by incompatible developments, which could result in an increase in production infrastructure could increase air pollution from on-site vehicles and machinery, and lorry traffic. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure will be automatically be allowed or that non-mineral development cannot take place. However, any effects would be uncertain as</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	PI1	PI2	PI1	PI2	
					<p>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.</p> <p>The policy options (PI1 and PI2) are likely to have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	0	R 0	R 0	<p>Safeguarding any existing and planned sites within in or outside the boundary of the National Park is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options (PI1 and PI2) are considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	0	R 0	R 0	<p>Safeguarding any existing and planned sites within in or outside the boundary of the National Park is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>The policy options (PI1 and PI2) are considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by	+/-?	+/-?	R +/-?	R +/-?	<p>Policy options PI1 and PI2 may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential adverse impacts of lorry traffic. However, the Safeguarding Areas will ensure that existing minerals production infrastructure continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts due to lorry traffic. Overall,</p>

SA Objective	SA Score		Will achievement of the SA objective have a benefit or impact on particular ecosystem services?		Justification
	PI1	PI2	PI1	PI2	
promoting use of the Lorry Route Network.					<p>a mixed effect, minor positive/minor negative is likely for this SA objective. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure will be automatically be 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.</p> <p>The policy options (PI1 and PI2) are likely to have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-?	+/-?	R +/-?	R +/-?	<p>Production infrastructure safeguarded by the policy option may potentially restrict non-mineral developments that could otherwise have a negative effect on emissions of greenhouse gases. However, the Safeguarding Areas may result in an increase in production infrastructure that could have a detrimental impact due to the adverse impacts of emissions from on-site vehicles and machinery, and lorry traffic. Overall, a mixed minor positive/minor negative effect is likely for this SA objective. It must be emphasised, however, that the process of safeguarding new or extensions to existing sites does not mean that production infrastructure 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.</p> <p>The policy options (PI1 and PI2) could have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>

Appendix 6

SA matrices for the Development Management Policy Options (for the Regulation 18 Draft JMLP)

Character

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy aims to protect the local amenity of the residents, neighbouring land uses and visitors to West Sussex through ensuring that mineral site development will not have an unacceptable impact on the distinctive character of towns and villages (including specific areas or neighbourhoods). A minor positive effect is therefore likely as the policy does not address the health or well-being of local residents and visitors to West Sussex.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>A minor positive effect is likely on this SA objective as through the protection of the local character from inappropriate mineral workings, this policy could also prevent development impeding on access to the countryside, open spaces and Public Rights of Way as these areas are associated with local landscape characteristics.</p> <p>The policy is likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. As such, no effect is expected.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates	0	S -	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
and other minerals sufficient for the needs of society.			<p>Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>There are two Areas of Outstanding Natural Beauty (AONB) in the County, also the South Downs National Park (SDNP) and other important Landscape Character Areas within West Sussex and therefore the impact of minerals working is an important factor to consider.</p> <p>Through only permitting development that will not have an unacceptable impact on the character, distinctiveness or sense of place of West Sussex and SDNP, the policy will protect the local landscape. The policy further supports this by stating where possible, mineral development should reflect and reinforce the character of the main natural character areas. As such, a significant positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Supporting ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Through protecting the character of West Sussex and the South Downs National Park, the policy could also conserve natural habitats and protected species as a large part of West Sussex is formally designated as being of international, national, regional and local importance for nature conservation. As such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services
8. To conserve, and where possible, enhance the historic environment.	+	C +	<p>West Sussex contains a large number of designations relating to the historic environment; including 235 Conservation Areas¹⁴⁴ and 7,532 Listed Buildings which are of architectural and historic interest covering every kind and age, reflecting the traditions and history of the area¹⁴⁵. West Sussex also has an exceptionally rich archaeological heritage which contributes to its character.</p> <p>Through protecting and, where possible, enhancing the unique landscape and townscape character of West Sussex and the South Downs National Park from inappropriate minerals development, these historic designations could be conserved and so a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

¹⁴⁴ https://www.westsussex.gov.uk/living/environment_and_planning/environment/conservation_areas.aspx

¹⁴⁵ West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	0	R 0	Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.

Landscape

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The development of a minerals site could have an adverse impact on the local amenity creating an unpleasant environment for local residents and visitors. Through protecting the landscape, this policy aims to protect both the designated landscapes and landscapes outside designated areas from inappropriate development. As such, a minor positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>The policy aims to protect both designated and undesignated landscapes within West Sussex from inappropriate minerals development. In achieving this, access to the countryside, open spaces and Public Rights of Way could be protected and as such, a minor positive effect is identified on this SA objective.</p> <p>The policy is likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates	0	S -	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
and other minerals sufficient for the needs of society.			Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>Within West Sussex, there are two Areas of Outstanding Natural Beauty (AONB), the South Downs National Park (SDNP) and other important Landscape Character Areas and therefore the impact of minerals working is a an important factor to consider.</p> <p>Through protecting the National Park and AONBs from unnecessary and inappropriate development, the policy aims to conserve and enhance the landscape, local distinctiveness and landscape character in West Sussex. It outlines that mineral development proposals must be a small-scale development to meet local needs that can be accommodated without undermining the objectives of the protected landscape. As such, a significant positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Through the protection of designated landscapes from mineral workings, the policy could conserve biodiversity as a large part of West Sussex is formally designated as being of international, national, regional and local importance for nature conservation. As such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
8. To conserve, and where possible, enhance the historic environment.	+	C +	<p>In West Sussex there are a large number of designations relating to the historic environment; including 235 Conservation Areas¹⁴⁶ and through protecting the National Park and AONBs from unnecessary and inappropriate development, the policy could also conserve these historic environment designations. As such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem</p>

¹⁴⁶ https://www.westsussex.gov.uk/living/environment_and_planning/environment/conservation_areas.aspx

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Historic Environment

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	0	N/A	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. As such, a negligible effect is identified. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>West Sussex has a rich archaeological heritage which represents a constraint to minerals development with specific reference to Scheduled Ancient Monuments (SAM) as the origins of their settings are in tranquil landscapes. Through the protection of these designations, and other historical designations within West Sussex, the policy is likely to have a significant positive effect on this SA objective as minerals development can impact on the historic environment. Mineral workings, however, 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.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P 0 R 0 C 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Provisioning, Regulating and Cultural ecosystem services</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
8. To conserve, and where possible, enhance the historic environment.	++	C ++	<p>West Sussex contains a large number of designations relating to the historic environment, including 235 Conservation Areas¹⁴⁷, 7,532 Listed Buildings, 34 Registered Park and Gardens, 346 Scheduled Monuments¹⁴⁸ and has an exceptionally rich archaeological heritage. Through the protection and where possible, enhancement of the natural and historic environment and resources and consideration of not adversely affecting currently unknown heritage assets with significant archaeological interest, this policy is likely to have a significant positive effect on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	<p>Additional traffic associated with minerals development may increase levels of nitrogen oxides and sulphur dioxide, produced by exhaust fumes which can have a detrimental impact on the fabric of historic buildings. The policy may therefore have a minor positive effect on this SA objective, as it will help ensure that proposals minimise their air quality impacts associated with mineral workings so that they are adequate and do not affect the fabric of historic buildings, and therefore the wider air quality of West Sussex.</p> <p>The policy is considered likely to have minor positive effects on Regulating</p>

¹⁴⁷ https://www.westsussex.gov.uk/living/environment_and_planning/environment/conservation_areas.aspx

¹⁴⁸ <http://list.english-heritage.org.uk/>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+?	R +?	<p>Vibration from increased traffic may impact on standing structures, earthworks and buried deposits. The policy may therefore have a minor positive effect on this SA objective, as it will help ensure that proposals minimise their adverse impacts of lorry traffic on the environment. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			The policy is considered unlikely to have any effect on Regulating ecosystem services.

Air, Soil and Water Quality

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy is likely have a minor positive effect on this SA objective, as it seeks to protect the water environment. This will help ensure the protection of the quality and quantity of water thereby protecting public drinking water supplies, which will prevent any effects on the health and wellbeing of local communities and visitors to West Sussex.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	CO	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. As such, a negligible effect is identified.</p> <p>Protection of the local economy would be supported by provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>The policy seeks to ensure that there are no unacceptable impacts on the quality and where appropriate, quantity of water, air and soil resulting from mineral development in West Sussex. A minor positive effect is likely on this SA objective as protecting these elements form basic landscape features could contribute protecting the landscape.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Mineral developments can have adverse effects on air, soil and water quality but the policy seeks to protect and, where possible, enhance the natural resources in West Sussex. This is achieved by avoiding or appropriately mitigating any negative effects thus benefiting biodiversity as a whole in West Sussex and as such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+	C +	<p>A minor positive effect is likely on this SA objective as mineral workings can increase traffic levels which in turn can increase levels of nitrogen oxides and sulphur dioxide, produced by exhaust fumes. These can have a detrimental impact on the fabric of historic buildings and as the policy states that mineral development proposals are to have no unacceptable impacts on the intrinsic</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>quality of air, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+	R +	<p>A minor positive effect is likely on this SA objective as the policy seeks to only permit minerals developments that have no unacceptable impacts on the intrinsic quality or quantity of soil. The policy however, does not address minimising the loss of best and most versatile land.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	++	R ++	<p>The air quality in West Sussex is generally good but faces threats from pollution caused by industrial processes and traffic. The policy seeks to address the effects of mineral developments through avoiding or appropriately mitigating any negative effects and providing enhancements. Additionally, the policy will only permit mineral proposals that have no unacceptable impacts on the management and protection of air quality, including any adverse impacts on any of the Air Quality Management Areas in West Sussex. A significant positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	++	R ++	<p>A significant positive effect is likely on this SA objective as the policy seeks to protect and, where possible, enhance the natural resources in West Sussex. The policy will only permit mineral development proposals if they can demonstrate that they will not cause unacceptable risk to the quality of surface and groundwater (including reservoirs), or the quality of rivers and other watercourses and water bodies within the area or downstream (including within built-up areas).</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			The policy is considered likely to have significant positive effects on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	<p>The policy states that mineral development proposals will only be permitted if they can demonstrate that they will not cause unacceptable risk to the quantity of surface and groundwater. A minor positive effect is therefore likely although uncertain as it would depend on the location and type of mineral activity.</p> <p>The policy is considered likely to have minor positive uncertain effects on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Biodiversity and Geodiversity

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	++	N/A	<p>Biodiversity can provide direct benefits to people, for example recreational, aesthetic and health benefits. The most recent visitor survey for the South Downs National Park showed that wildlife is a key attraction for over a quarter of the visitors (26%) to the Park equating to 11.5 million visits per year to see wildlife and habitats.</p> <p>The policy ensures that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection from mineral workings which will therefore contribute to the health and well-being of both residents and visitors. As such, a significant positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all four categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>Public Rights of Way and open access land are often located within/on designated biodiversity sites and areas with wildlife interest. As the policy aims to protect these sites, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positives effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>Important habitats and biodiversity can have a strong relationship with landscapes. The conservation and enhancement of biodiversity via the policy will therefore have minor positive effects on this SA objective, as it will also protect and contribute towards the important landscapes within West Sussex.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	++	P ++ R ++ C ++	<p>The policy seeks to ensure that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to biodiversity can be secured where possible. A significant positive effect is therefore likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+	C +	<p>The policy is likely to have a minor positive effect on this SA objective as it aims to protect and conserve geodiversity where possible; however there is no mention of the policy seeking to enhance geodiversity.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
8. To conserve, and where possible, enhance the historic environment.	0	C 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Public Amenity and Health

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	++	N/A	<p>The policy seeks to manage the impacts on local amenity including the consideration of any particular issues in areas where there is a concentration of minerals workings. This includes only permitting mineral development proposals where lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity. As such, a significant positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	++	C ++	<p>The policy specifies that the routes and amenity of Public Rights of Way are safeguarded, or where temporary or permanent re-routeing can be justified, replacement routes of comparable or enhanced amenity value are provided. As such, a significant positive effect is therefore likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing	0	S -	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
for the supply of aggregates and other minerals sufficient for the needs of society.			SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C 0	Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	Through protecting communities from the adverse impacts of minerals development, the policy will also protect biodiversity including natural habitats and protected species from lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic. As such, a minor positive effect is likely on this SA objective. The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C 0	Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	+	C +	The policy seeks to protect communities from the adverse impacts of minerals development by only permitting development that controls lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic to safe levels for humans. Vibrations and emissions can harm historic assets and

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>therefore through the policy reducing these, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	<p>Through protecting communities from the adverse impacts of minerals development, the policy will only permit development where lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health. The aim of the policy will therefore reduce air pollution and as such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate	0	R 0	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
development in the floodplain.			SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+	R +	Proposals for mineral development will be permitted provided that lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity. As this could minimise transport of minerals by roads, a minor positive effect is likely on this SA objective. The policy is considered likely to have minor positive effects on Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	0	R 0	Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.

Flooding

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>Flooding can endanger lives, damage settlements and can also adversely affect the health of people. This is especially true in West Sussex where in 2009 there were 75 significant flood events resulting from 51 rainfall events. As such, this policy is likely to have a minor positive effect on this SA objective as it supports flooding mitigation measures to be provided to an appropriate standard.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient	0	S -	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
for the needs of society.			minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>Flooding can damage buildings and settlements and also adversely affect the characteristics of landscapes. As this policy seeks to minimise flood risk through permitting developments that include mitigation measures and adhere to shoreline and catchment management plans, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Flooding can damage habitats and therefore through implementing mitigation measures and adhering to shoreline and catchment management plans, this policy is likely to have a minor positive effect on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	0	C 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	+	R +	<p>The policy outlines that mitigation measures need to be set out in mineral development proposals and through methods such as Sustainable Drainage Systems (SuDS), water quality can also be improved. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	++	R ++	<p>Minerals sites can also contribute to reducing flood risk as they can offer opportunities for water storage. The policy is likely to have significant positive effects on this SA objective as it supports proposals that reduce the likelihood and impact of flooding both on and off-site. This is required in West Sussex as over 12% of the county lies within a flood plain¹⁴⁹ and the coastline is generally low-lying and is naturally sinking. This results in increased vulnerability to the impact of climate change including coastal, river (fluvial), groundwater and</p>

¹⁴⁹ The flood risk datasets for West Sussex have not yet been collected from the relevant body and are therefore not available for inclusion in the SA at this time. It will, however, be included in further stages of the SA.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>surface water flooding resulting from sea-level rise, increased storminess, increased winter rainfall, and higher and more intensive waves.</p> <p>The policy is considered likely to have significant positive effects on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Transport

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>Transport is a major issue when considering proposals for mineral development as the generation of traffic can and does have negative impacts on the wellbeing and health of local communities. The proposed policy may have minor positive effects on this SA objective as it supports proposals that use rail or water to transport minerals. The policy also states that where the transportation of minerals is required by road, the Advisory Lorry Route with minimal use of local roads should be utilised which could reduce the volume of lorries near local communities. 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.</p> <p>The protection of health and well-being would be supported by all four of the categories of ecosystem services but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+?	C +?	<p>Transport is a major issue when considering proposals for mineral development as the generation of road traffic can and does have negative impacts on the environment and landscape. The proposed policy may have minor positive effects on this SA objective as it aims to use sustainable modes of transport (rail and water) before considering road options. The policy also seeks to ensure that and required road use for materials are capable of being transported using the Advisory Lorry Route with minimal use of local roads, therefore reducing the impact on the landscape character in West Sussex. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	P + R + C +	<p>Minerals working can generate road traffic which can and does have negative impacts on the environment and therefore biodiversity. The policy seeks to minimise road traffic and prioritise sustainable methods of transportation (rail and water) above road. A minor positive effect is identified as these measures will reduce adverse effects such as noise, air pollution, and vibration which would protect habitats and protected species. 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.</p> <p>The policy is considered likely to have minor positive effects on Provisioning,</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	+?	C +?	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. The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	Air quality in West Sussex is generally good but faces threats from pollution caused by industrial processes and traffic. The policy supports sustainable modes of transport (rail and water) over road, and so a minor positive effect is likely because through minimising traffic, air pollution maybe reduced. The policy is considered likely to have minor positive effects on Regulating

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	++	R ++	The policy seeks to minimise transport of minerals by roads through supporting sustainable modes of transport (water and rail) over road. Where road use is necessary however, the policy promotes use of the Lorry Route Network to avoid local roads. As such, a significant positive effect is likely on this SA objective. The policy is considered likely to have significant positive effects on Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	+	R +	Through prioritising sustainable modes of transport (rail and water) the policy will reduce vehicle emissions thus reducing greenhouse gases. A minor positive effect is therefore identified on this SA objective. The policy is considered likely to have significant positive effects on Regulating ecosystem services.

Aerodrome Safeguarding

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	0	N/A	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	A minor positive effect is likely on this SA objective as the policy ensures that the operational integrity or safety of aviation facilities is not adversely affected by minerals development. Also, that after-uses for mineral workings must be designed in a manner to avoid increased risk of bird strike. Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P O R O C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	0	C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Cumulative Impact

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy outlines that mineral development proposals will only be permitted where it can be demonstrated that there will not be an unreasonable level of disturbance to local communities either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. This will therefore include the consideration of the well-being and amenity of local residents. As such, a minor positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +?	<p>The policy outlines that mineral development proposals will only be permitted where it can be demonstrated that there will not be an unreasonable level of disturbance the environment either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. This could therefore include the consideration of Public Rights of Way. As such, a minor positive effect is likely on this SA objective. However, the effects are uncertain as the location of the proposed mineral workings will determine the effect on recreational opportunities.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	-	N/A	<p>The policy does not specifically refer to the potential for cumulative impacts on businesses despite stating this in the issue that this policy is trying to address. As such, a minor negative effect is expected on this SA objective as the vitality and viability of the local economy could be compromised through mineral developments operating simultaneously and/or successively.</p> <p>Protection of the local economy would be supported by Provisioning ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, but is unlikely to have a particular impact or benefit on ecosystem services.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Consideration of cumulative effects of previous and existing minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of the landscape, local distinctiveness and landscape character in West Sussex. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration biodiversity including natural habitats and protected species in West Sussex. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+	C +	<p>The policy outlines that mineral development proposals will only be permitted where it can be demonstrated that there will not be an unreasonable level of disturbance the environment either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. This could therefore include the consideration of geodiversity. As such, a minor positive</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+	C +?	<p>The policy states that mineral development proposals will only be permitted where it can be demonstrated that an unreasonable level of disturbance to the environment will not occur either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. A minor positive effect is identified as the historic environment could be considered as an environmental factor. However, the effects are uncertain as the location of the proposed mineral workings will determine the effect on the historic environment.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+	R +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of soil quality and the loss of best and most versatile land. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive uncertain effects on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	<p>Through the consideration of cumulative impacts of minerals development on the environment, air pollution levels will be assessed as part of a proposal and as such, this policy will have a minor positive effect on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water	+	R +	<p>The policy states that mineral development proposals will only be permitted where it can be demonstrated that an unreasonable level of disturbance to the</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
resources, water quality and the function of the water environment.			<p>environment will not occur either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. A minor positive effect is identified as water quality is considered as an environmental factor.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration the flooding. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+	R +	<p>Through considering cumulative impacts of minerals development on the environment, this policy will have a minor positive effect on this SA objective as levels of traffic will be considered and monitored on existing minerals workings and new site proposals.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+	R +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of reducing greenhouse gas emissions. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>

Design and Operation of Mineral Developments

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy considers the varied traditions and character of the different parts of West Sussex and the South Downs National Park including townscapes, streetscapes and the protection of existing features of cultural and landscape significance. A minor positive effect is therefore likely on this SA objective as it protects the amenity of residents and visitors to West Sussex and the South Downs National Park.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>Mineral proposals may affect the amenity of users of the countryside, in particular those using the Public Rights of Way (PROW) network. As the policy requires the protection of existing features of landscape significance and a means of screening the proposed development, this could protect the 4000km of PROW and access to the countryside in West Sussex. A minor positive effect is therefore likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Developing an appropriate approach to the sustainable design and operation of minerals developments is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Developing an appropriate approach to the sustainable design and operation of minerals developments is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>Through protecting and, where possible, enhancing the unique landscape and townscape character of West Sussex and the South Downs National Park, this policy is likely to have a significant positive effect on this SA objective. The policy states that proposals for minerals development will be permitted provided that, where appropriate, the scale, form, and layout (including landscaping) take into account the local context including the skyline and topography.</p> <p>Additionally, the policy outlines that a minerals development proposal should be accompanied by a landscaping scheme for the operational life of the site to include a means of screening the proposed development.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>The policy outlines that a landscaping scheme should accompany the proposal which would include means of screening the proposed development, including planting, with native species where appropriate, to maximise opportunities for habitat creation. As such, a minor positive effect is identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+?	C +?	<p>The policy requires mineral development proposals to consider the local context of the proposed workings and to protect existing features of cultural and</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>landscape significance which could include Local Geological Sites. A minor positive effect is therefore identified. However, the effects are uncertain as the location of sites would determine the outcome of this SA objective.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+	C +	<p>The policy pays regard to the local context of the proposed minerals development which includes natural and man-made features, townscape and streetscape. Additionally, the policy states that proposals for mineral extraction/processing, and associated activities should be accompanied by a working programme for the proposed operation which includes the protection of existing features of cultural significance. All these elements can contribute to conserving the historic environment and as such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+	R +	<p>The policy outlines that mineral development proposals must take into account adjoining land-uses and minimise potential conflicts between land-uses and activities. Additionally, the policy protects soil quality through requiring mineral extraction proposals to plan for the stripping, storage and re-spreading of soils. A minor positive effect is therefore expected on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	<p>The policy states that mineral development proposals must include measures that avoid or at least minimise greenhouse gas emissions which in turn would reduce air pollution. As such, a minor positive effect is identified.</p> <p>The policy is considered likely to have minor positive effects on Regulating</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	+	R +	<p>The policy promotes maximising water efficiency which can protect water resources and the water environment as a whole. As such a minor positive effect is likely on this SA objective</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	<p>The policy requires a working programme to accompany the mineral development proposal that is to include a mitigation/compensation scheme for any environmental impacts which could include reducing the vulnerability to flooding. As such, a minor positive effect is identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R -	<p>The policy requires mineral development proposals to be accompanied by a working programme for the proposed operation which includes arrangements as applicable for the scale and nature of the operation, for phasing of workings/construction and plant and machinery to be used. However, it does not specify minimising the transportation of minerals by roads. As such, a minor negative effect is identified on this SA objective.</p> <p>The policy is considered likely to have a minor negative effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	++	R ++	<p>The policy promotes low-carbon energy generation as well as stating that mineral development proposals must include measures that avoid or at least minimise greenhouse gas emissions. A significant positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Regulating</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			ecosystem services.

Plant, processing and secondary activities

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>The provision of secondary mineral processing and/or ancillary activities through this policy is likely to have a minor negative effect as sites permitted via this policy could lead to minor negative effects on the amenity of residents, land uses and visitors to West Sussex. Furthermore, the key challenge this policy aims to address includes the protection of public amenity; however, the policy does not specifically include any measures that would protect public amenity, apart from criteria (d) which requires proposals to be consistent with other policies of the development plan. Therefore, minor negative effects are expected for this SA objective. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-?	C -?	<p>The provision of secondary mineral processing and/or ancillary activities through this policy is likely to have a minor negative effect as sites permitted via this policy could lead to minor negative effects on the amenity restoration users. Furthermore, the key challenge this policy aims to address includes the protection of public amenity; however, the policy does not specifically include any measures that would protect public amenity, apart from criteria (d) which requires proposals to be consistent with other policies of the development plan. Therefore, minor negative effects are expected for this SA objective. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Cultural</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Secondary mineral processing and/or ancillary activities permitted through this policy are likely to have minor positive effects on this SA objective, as minerals are essential to support sustainable economic growth. These facilities and activities 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 West Sussex and the country need. Therefore a minor positive effect is expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Secondary mineral processing and/or ancillary activities permitted through this policy will not be a form of inappropriate development as they will contribute to the supply of minerals and as such a minor positive effect is identified. However, the policy indirectly supports the extraction and processing of primary minerals to supply ancillary activities and so a minor negative effect is also identified resulting in mixed affects overall on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-?	C -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have adverse impacts on the landscape due to the presence of the machinery and structures used in minerals processing. Furthermore, this policy aims to address the issue of protecting and, where possible, enhancing the unique landscape and townscape character of West Sussex and the South Downs National Park; however, the policy does not</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>specifically include any measures that would address this, apart from criteria (d) which requires proposals to be consistent with other policies of the development plan. Therefore, minor negative effects are expected for this SA objective. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have adverse impacts on biodiversity, including natural habitats and protected species. Although, these are likely to be minor as the policy requires proposals to demonstrate that the proposed operations have a significant link to the existing operations on site, therefore not a new site, and that proposals are consistent with other policies of the development plan. Thereby providing mitigation. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>The development of secondary mineral processing and/or ancillary activities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have an effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have adverse impacts on the historic environment.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Although, these are likely to be minor as the policy requires proposals to demonstrate that the proposed operations have a significant link to the existing operations on site, therefore not a new site, and that proposals are consistent with other policies of the development plan. Thereby providing mitigation. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>The development of secondary mineral processing and/or ancillary activities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have an effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have minor negative effects on this SA objective, as the facilities and transport involved will likely result in increases in air pollution. However, mitigation will be provided via criteria (d) of the policy which requires proposals to be consistent with other policies of the development plan. Furthermore, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water	?	R ?	<p>Secondary process and/or ancillary activity proposals brought forward by this policy may affect the water resources, water quality or the function of the water</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
resources, water quality and the function of the water environment.			<p>environment in West Sussex. At this stage in the planning process however, it is not possible to determine the impacts of policy options such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage and so an uncertain effect is expected on this SA objective.</p> <p>The policy is considered likely to have uncertain effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>The development of secondary mineral processing and/or ancillary activities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have an effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have minor negative effects on this SA objective, as the activities will involve the movement of materials by road. However, mitigation will be provided via criteria (d) of the policy which requires proposals to be consistent with other policies of the development plan. Furthermore, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	-?	R -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have minor negative effects on this SA objective, as the facilities and transport involved will likely result in increases in air pollution and</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>therefore greenhouse gases. However, mitigation will be provided via criteria (d) of the policy which requires proposals to be consistent with other policies of the development plan. Furthermore, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Regulating ecosystem services.</p>

Restoration of Quarries

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy supports proposals that will provide high quality and practicable restoration and aftercare which could enhance the local amenity for residents and visitors to West Sussex. The policy also supports a phased restoration occurring at the earliest opportunity. As such a minor positive 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.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>The policy supports proposals that will re-route or reinstate Public Rights of Way which maximises recreational opportunities for all. A minor positive effect is therefore identified 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>The policy supports proposals for mineral development that are accompanied by comprehensive restoration schemes, including those that make provision for high quality and practicable restoration, management and aftercare. This may result in restoration schemes and after uses that benefit the local economy in the long term. Therefore, minor positive effects are expected on this SA objective. However, the effects are uncertain as it will depend on the type of</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>after uses that are proposed.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+?	C +?	<p>The policy supports proposals that are appropriate for their locations and that maximise benefits taking into account local landscape character. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	P +? R +? C +?	<p>The policy states that mineral development proposals will be approved if they are appropriate for the locations, maximising benefits taking into account biodiversity, and wider environmental benefits. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Provisioning, Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	?	C ?	<p>Through encouraging high quality restoration that is appropriate to the area, this policy contributes to protecting and conserving the geodiversity assets in West Sussex. However, the policy does not mention geodiversity in its wording and, as such, an uncertain effect is identified on this SA objective.</p> <p>The policy is considered likely to have uncertain effects on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+?	C +?	<p>The policy states that mineral development proposals will be approved if they are appropriate for the locations, maximising benefits taking into account the historic environment. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	?	R ?	<p>The policy encourages high quality restoration which could include the protection and possible enhancement of soil quality and reclamation of the best and most versatile land. The effects however are uncertain as soil is not specifically mentioned in the policy and the effects would depend 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.</p> <p>The policy is considered likely to have uncertain effects on Regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>This policy may help protect water quality in West Sussex as it requires proposals for mineral developments to be accompanied by comprehensive schemes that are of high quality and that take into account the local area and maximising biodiversity. Therefore, the water environment in West Sussex could benefit from this policy but as this is not specified in the policy wording, an uncertain effect is currently expected. Effects are also currently uncertain because 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.</p> <p>The policy is considered likely to have uncertain effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	?	R ?	<p>This policy may help reduce vulnerability to flooding in West Sussex as it requires proposals for mineral developments to be accompanied by comprehensive schemes that are of high quality and that take into account wider environmental objectives. Reducing vulnerability to flooding however is not specified in the policy wording and so a negligible effect is currently expected. Effects are currently 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.</p> <p>The policy is considered likely to have uncertain effects on Regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Community Benefits and Engagement

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>As mineral workings can impact local communities, this policy aims to protect local communities from adverse impacts of minerals development. The policy requires that proposals for minerals development will be permitted provided that, where necessary, a site liaison group is established by the operator to address issues arising from the operation of a minerals development or facility. Furthermore, operators are required to conduct early engagement with local communities prior to submission of an application, and reflect the outcome of those discussions in the design of proposals as far as practicable. Therefore, a minor positive effect is likely on this SA objective as this could protect the health, well-being and amenity of residents.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P 0 R 0 C 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
8. To conserve, and where possible, enhance the historic environment.	0	C 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development and that operators discuss proposals with local communities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>

Appendix 7

SA matrices for the potential JMLP site options (for the Regulation 18 Draft JMLP)

Woodmancote M/CH/1A

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There are agricultural business and residential units within 100m to the south along Woodmancote Lane, which form part of the settlement at Woodmancote. There are also residential buildings within 100m of the southeast of the site. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>There are no areas identified or allocated for residential development within 100m of the site in the Chichester Local Plan: Key Policies 2014-2029, (adopted 15th July 2015). However, this site is located within 1km of settlements, the closest being Hambrook and Woodmancote which are adjacent to the southern area of the site, and Southborune 950m to the south of the site, which is separated from the site by the A27.</p> <p>There are no existing or allocated active mineral or waste sites within 1km of the site. Therefore, neighbouring settlements are unlikely to experience cumulative effects on amenity.</p> <p>However, Hambrook Mobile Civic Amenity Site on Marlpit Lane, is a mobile site used by of the community. However, it is unlikely to have a cumulative effect in combination with this proposed site, as the Amenity Site is a mobile site and therefore not permanent and unlikely to lead to cumulative effects.</p> <p>The proposed site is also within 1km of other proposed sites which form part of</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			the Hambrook Grouping. While all the individual sites will not be working simultaneously, depending on the potential site operator, the processing area north of Woodmancote could be active while each site is operational. Therefore, there could also be cumulative effects on the amenity of local communities due to the processing area being active at the same time as this site.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	--	C--	<p>The site contains two PROW. Public Bridleway no.250 runs north to south in the western area of the site, while Public Footpath no.252 is in the eastern area of the site. In addition there are three further footpaths located within 250m of the site, the closest being Bridleway no. 255 10m to the east of the site. Footpath no.247 and no.251 are located 230m to the south of Woodmancote Lane and Footpath no.249 is 160m west of the site. The WSCC/SDNPA site assessment notes that 'the impacts are likely to be resolvable through mitigation measures such as screening or stand offs.</p> <p>The WSCC/SDNPA site assessment study notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application</i>'.</p> <p>Therefore, this proposed site could have a significant negative effect on the amenity of users of PROW and other users of the countryside in the County, as development of the site could either mean removing part of a facility, or removing or temporarily closing land which has the potential for recreation/access to the countryside.</p> <p>The site could have a significant negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex economy; and given that the overall number of mineral sites likely to be

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
		ecosystem service.	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.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>The site does not lie within any area of landscape designation: the South Downs National Park is 500m to the north, whilst the Chichester Harbour AONB is approximately 2.5km to the south. The Zone of Theoretic Visibility indicates potential visibility from the AONB to the site, however true visibility will be limited by trees and development. There are clear views to and from the rising South Downs National Park to the north.</p> <p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'medium'. The report added that this site <i>'would not compromise the tranquillity and sense of remoteness identified as key sensitivities of South Downs National Park, despite its proximity. Due to the topography of the site, development of mineral workings in this location is unlikely to visually intrude on surrounding areas and there is potential to further limit visibility into the site. Though the tranquillity and rural nature of the site would be impacted upon and the proximity of Woodamancote to the southern boundary of the site increases the site's sensitivity.'</i></p> <p>Therefore, development at this site is considered likely to have a minor negative</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			effect on designated landscapes, local landscape character or tranquillity. The site could have a minor negative effect on cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	<p>P -?</p> <p>R -?</p> <p>C -?</p>	<p>The WSCC/SDNPA site assessment identifies the River Ems and Meadows Site SNCI within 500m of the west of the site. Its principal habitat includes river and water meadows. There is no ancient woodland in or adjacent to the site, but there are patches within 1km to the south, north and west. In addition, the study also notes that this site is within the Goodwood aeronautical safeguarding zone. However, Goodwood Aerodrome have no comments or objections to this site.</p> <p>In terms of international sites, this site lies approximately 2km north of Chichester and Langstone Harbours SPA/Ramsar, and Solent Maritime SAC, and is 3.4km from Kngley Vale SAC.</p> <p>The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration. The HRA report concluded that overall, development at this site is unlikely to cause harm to international sites or other sites within West Sussex. However, it was noted that transport assessments for these sites should take into account any impacts on sites in Hampshire and Surrey County Councils if a significant increase in movements on the A27 and A3 is likely. The West Sussex Minerals Local Plan: Transport Assessment (2015) has since estimated that there would be 108 two way daily AADT movements and therefore does not represent a significant increase.</p> <p>The HRA ruled out adverse effects on the integrity of the international sites.</p> <p>Overall, a minor negative effect is likely, due to the proximity of this site to Ancient Woodland and the River Ems and Meadows SNCI. However, this effect would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			A minor negative effect is also considered likely in relation to provisioning, regulatory and cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C 0	<p>This site is not within 500m of a national site of geological interest (SSSI) or Local Geological Site. Therefore, development at this site is considered unlikely to affect this objective.</p> <p>The site is considered unlikely to have any effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	0	C 0	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity of 'low'. Therefore, a negligible effect is considered more likely.</p> <p>There are five cultural heritage assets within 1km of this site. The nearest sites are two Grade II Listed buildings to the south within Woodmancote. This included, The Manor House, which is 70m away and Woodmancote Farmhouse which is 265m away. To the south east, Newell House is 670m away while Hambrook House Historic Parkway and Listed Building are approximately 880m away.</p> <p>In the supporting text to the LUC 2015 Addendum, it is noted that <i>'Woodmancote Farm is within the site boundary. However, the farmhouse itself is sited to the south of the farm, bordered to the north by other farm buildings and, as such, the setting of the farm more generally may be affected by workings on this site. This assessment assumes that the farm would be retained. The Westbourne Conservation Area is sited 2km to the southwest of the site, whilst the Funtington Conservation Area is sited 2km to the east. As a result of the lie of the land and existing screening, there is no intervisibility between the site and these two areas.'</i></p> <p>The WSCC/SDNPA site assessment notes that development at this site would be acceptable at this site in relation to archaeology <i>'provided that impacts upon any buried archaeological remains can satisfactorily be mitigated.'</i> The site assessment also states that an archaeological, geoarchaeological impact</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>assessment would be required (including archaeological desk-based assessment and non-invasive and invasive field evaluation). The field evaluation should be completed pre-determination and the results made available to consider at the application stage. Therefore, it is considered that this site is unlikely to have an effect on these assets.</p> <p>The site is unlikely to have an effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is large (28.22 ha) and is mainly on grade 3b agricultural land with a small part in Grade 2. Therefore, a minor negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>The WSCC/SDNPA site assessment study notes that, in terms of access '<i>this site only has a frontage onto Marlpit Lane. There is a former gravel extraction site to the north and this has a separate access direct onto Common Road. Irrespective of whether a new access is created onto Marlpit Lane or the existing access reopened, a routing agreement is suggested to prevent HGV access and egress via the village of Woodmancote, which is to the south. In terms of general access routing, there are two broad options, either to use Common Road/B2136/B2147 to head east and west, or to use Common Road/B2136/Cheesemans Lane and head south to access the A259. Both routes would involve routing HGV traffic through residential village areas and therefore need to be carefully considered on balance. The option that has previously been supported would be to route traffic along Cheesemans Lane to the A259 so as to avoid the villages of Funtington, Ashling and Westbourne.</i></p> <p>This site is not located within 1km of an Air Quality Management Area but the WSCC/SDNPA site assessment notes that '<i>traffic from this site may pass through the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285-St Pancras).</i>' The site assessment also states that '<i>if traffic would</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p><i>have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required.'</i></p> <p>In terms of international sites, The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration.</p> <p>It was concluded that the Hambrook grouping sites (which the Woodmancote site is a part of) '<i>will not have adverse effects on air quality at any European designated sites within West Sussex, but that the transport assessments for these minerals sites should take into account any impacts on sites in Hampshire and Surrey if there will be a significant increase in vehicle movements on the A27 and A3. A significant increase is defined as an increase of over 200 Heavy Duty Vehicles per day on either road from any minerals site.</i> The West Sussex Minerals Local Plan: Transport Assessment (2015) estimated that there would be 108 two way daily AADT movements and therefore does not represent a significant increase.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>The site is not located within SPZ1. Almost half of this site is located within SPZ 2/3 (north of Hairspring Watercress abstraction/spring). The site is not within or adjacent to a water body.</p> <p>According to the WSCC/SDNPA site assessment, Environment Agency maps indicate that the site is within groundwater vulnerability zones: Major aquifer</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>(high) and minor aquifer (high). It is also noted that a stage 1 Hydrogeological assessment would be required prior to allocation.</p> <p>At this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>This site is located within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the Hambrook site (which this site forms part of) was identified as having no effect (green) against most of the flooding sources. However, a low risk (yellow) was found in relation to surface water due to 10% of site being at a higher risk. In addition, a negligible risk of susceptibility (amber) was found in relation to ground water, due to parts of site being at higher risk.</p> <p>Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'medium' acceptability rating, dependent on <i>'the outcome of Highways England proposals for the A27 Chichester bypass'</i>. Therefore, it could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Overall, a minor negative effect is likely for this objective.</p> <p>The site could have a minor negative effect on regulating ecosystem services</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to the Adopted Chichester Local Plan: Key Policies 2014-2029 Proposals Map, this site is within 10km of strategic allocations, as Westbourne is approximately 1.2km to the west and Southbourne is 950m to the south. Therefore, this site could potentially contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Common Road West M/CH/1B

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There is a single property and business, located near the eastern area of the site on Cheesemans Lane. There is also a cluster of business units and a large office building to the south, a residential building to the west and a research establishment to the north. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>There are no areas identified or allocated for residential development within 100m of the site in the Chichester Local Plan: Key Policies 2014-2029, (adopted July 2015). However, this site is located within 1km of the settlements Funtington to the east and Hambrook to the south of the site.</p> <p>There are no existing or allocated waste sites or existing mineral sites within 1km of the site. Therefore, neighbouring settlements are unlikely to experience cumulative effects on amenity.</p> <p>However, Hambrook Mobile Civic Amenity Site on Marlpit Lane, is a mobile site used by of the community. However, it is unlikely to have a cumulative effect in combination with this proposed site, as the Amenity Site is a mobile site and therefore not permanent and unlikely to lead to cumulative effects.</p> <p>Also, the proposed site is within 1km of other proposed sites which form part of the Hambrook Grouping. While all the individual sites will not be working simultaneously, depending on the potential site operator, the processing area</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			north of Woodmancote could be active while each site is operational. Therefore, there could also be cumulative effects on the amenity of local communities due to the processing area being active at the same time as this site.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	C-	<p>Two sections of the Bridleway no. 254 are within 250m of this site. The nearest section is adjacent to the western boundary of the site, while the furthest section of the Bridleway no. 254 is 130m northwest on the north side of Common Road and south of Hares Lane. Therefore, the site could have a minor negative effect on the amenity of users of PROW by making the facilities less attractive for users and impacting on amenity.</p> <p>The WSCC/SDNPA site assessment study notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>Therefore, this proposed site could have a minor negative effect on the amenity of users of PROW and other users of the countryside in the County.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates	+	S -	New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
and other minerals sufficient for the needs of society.			<p>degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>The site is within 1km of the South Downs National Park.</p> <p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'low-medium' sensitivity to extraction and 'moderate to high' capacity overall for accommodating mineral extraction.</p> <p>The supporting text states that '<i>Though the landscape character and the landscape value of the site are judged to be low, the high visibility of the site in the surrounding landscape and intervisibility with the South Downs makes it of slightly higher sensitivity. While development of mineral workings in this location has the potential to be visually intrusive on surrounding areas, there is scope to reduce visibility into the site from the immediate vicinity through screening or filtering of views with vegetation. Furthermore, 'there is considerable scope for the improvement of the current condition of landscape features, visual amenity and habitat value in conjunction with the development of the site.'</i></p> <p>Therefore, development at this site is considered to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --?</p> <p>R --?</p> <p>C --?</p>	<p>The WSCC/SDNPA site assessment noted that '<i>the Funtington West Site contains two areas of Ancient Woodland (SU795086 and SU787084).</i>' Both of these Ancient Woodland sites are within 620m to the north of this site (which is just south of Funtington West), with the closest being 225m to the north.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>In terms of international sites, this site lies approximately 3km north of Chichester and Langstone Harbours SPA/Ramsar, and Solent Maritime SAC and 3km south west of Kingley Vale SAC.</p> <p>The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration. The HRA report concluded that overall, development at this site is unlikely to cause harm to international sites or other sites within West Sussex. However, it was noted that transport assessments for these sites should take into account any impacts on sites in Hampshire and Surrey County Councils if a significant increase in movements on the A27 and A3 is likely. The West Sussex Minerals Local Plan: Transport Assessment (2015) has since estimated that there would be 108 two-way daily AADT movements and therefore does not represent a significant increase.</p> <p>Although an adverse effect was ruled out on the integrity of the international sites, a significant negative effect is still likely as this site is within close proximity to Ancient Woodland. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>It is considered that the site could have a significant negative effect on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>This site is not within 500m of a national site of geological interest (SSSI) or Local Geological Site. Therefore, development at this site is considered unlikely to affect this objective.</p> <p>The site is considered unlikely to have any effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity of 'low-medium'.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Funtington Conservation Area, which includes Grade II Listed Buildings, is 785m to the east of this site. In addition, this site is within close proximity to two Historic Parks. Asdean Park, which also includes Grade II Listed Buildings is 800m to the north and Hambrook House, which includes a Grade II Listed Building is 695m to the south. Balsam's Farmhouse Grade II Listed Building is also 955m southeast of the site. Racton Park Farmhouse Grade II Listed Building is 950m northwest of this site.</p> <p>The LUC 2015 Addendum states that <i>'there are no Listed Buildings in close proximity. However, there are some Listed Buildings to the north (including Grade II Listed Buildings Racton park Farmhouse and Adsdean House West Lodge). Given the rising nature of the land to the north, working of this site for mineral extraction may negatively affect the setting of these Listed Buildings. The Funtington Conservation Area is sited within 1km to the east of the site. There are clear views to the eastern edge of the Conservation Area. Again, working on the site could have negative implications for this heritage area'</i></p> <p>The WSCC site assessment study also notes that this sites <i>'includes the site of one of the runways of the World War 2 Funtington Advanced Landing Ground: buried wartime airfield features may survive. Roman finds have previously been reported from the former airfield site, and finds of prehistoric worked flint and pottery have been recovered from near the site. Other archaeological finds may lie within the site. The site may overlie ancient prehistoric shoreline deposits.'</i></p> <p>The WSCC/SDNPA site assessment also states that development at this site would be acceptable in relation to archaeology <i>'provided that impacts upon any buried archaeological remains can satisfactorily be mitigated.'</i> The site assessment also states that an archaeological, geoarchaeological impact assessment would be required (including archaeological desk-based assessment and non-invasive and invasive field evaluation). The field evaluation should be completed Undertaken pre-determination and the results made available to consider at the application stage. Therefore, this site is considered to have a minor negative effect on this objective. However, these effects would be</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>uncertain as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is small (7.36 ha) and is entirely located on grade 3b agricultural land. Therefore, a minor negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>This site is not located within 1km of an Air Quality Management Area but the WSCC/SDNPA site assessment notes that <i>'traffic from this site may pass through the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285-St Pancras).'</i> The site assessment also states that <i>'if traffic would have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required.'</i></p> <p>The WSCC/SDNPA site assessment study notes that, in terms of access <i>'this site only has a frontage onto Marlpit Lane. There is a former gravel extraction site to the north and this has a separate access direct onto Common Road. Irrespective of whether a new access is created onto Marlpit Lane or the existing access reopened, a routing agreement is suggested to prevent HGV access and egress via the village of Woodmancote, which is to the south. In terms of general access routing, there are two broad options, either to use Common Road/B2136/B2147 to head east and west, or to use Common Road/B2136/Cheesemans Lane and head south to access the A259. Both routes would involve routing HGV traffic through residential village areas and therefore need to be carefully considered on balance. The option that has previously been supported would be to route traffic along Cheesemans Lane to the A259 so as to avoid the villages of Funtington, Ashling and Westbourne'</i>. In terms of international sites, The Hambrook Grouping (which this site forms part of) was</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration.</p> <p>It was concluded that the Hambrook grouping sites (which the Common Road West site is a part of) <i>'will not have adverse effects on air quality at any European designated sites within West Sussex, but that the transport assessments for these minerals sites should take into account any impacts on sites in Hampshire and Surrey if there will be a significant increase in vehicle movements on the A27 and A3. A significant increase is defined as an increase of over 200 Heavy Duty Vehicles per day on either road from any minerals site.</i> The West Sussex Minerals Local Plan: Transport Assessment (2015) estimated that there would be 108 two-way daily AADT movements and therefore does not represent a significant increase.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>The site is not located within SPZ1. Almost half of this site is located within SPZ 2 (north of Hairspring Watercress abstraction/spring). The site is not within or adjacent to a water body.</p> <p>According to the WSCC/SDNPA site assessment, Environment Agency maps indicate that the site is within groundwater vulnerability zones: Minor aquifer (intermediate). It is also noted that a stage 1 Hydrogeological assessment</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>would be required prior to allocation.</p> <p>At this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>This site is located within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the Hambrook site (which this site forms part of) was identified as having no effect (green) against most of the flooding sources. However, a low risk (yellow) was found in relation to surface water due to 10% of the site being at a higher risk. In addition, a negligible risk of susceptibility (amber) was found in relation to ground water, due to parts of site being at higher risk.</p> <p>Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'medium' acceptability rating, dependent on <i>'the outcome of Highways England proposals for the A27 Chichester bypasses'</i>. Therefore, it could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a minor negative effect is likely for this objective.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			The site could have a minor negative effect on regulating ecosystem services
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to the Adopted Chichester Local Plan: Key Policies 2014-2029 Proposals Map, this site is within 10km of strategic allocations, as Westbourne is approximately 2.5km to the west and Southbourne is 2km to the southwest. Therefore, this site could potentially contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Common Road East M/CH/1C

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There is a single property and businesses, located near the western area of the site on Cheesemans Lane. There is also a farm building to the south east of the site (Balsman's Farm), and a research establishment to the north of the site. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>There are no areas identified or allocated for residential development within 100m of the site in the Chichester Local Plan: Key Policies 2014-2029, (adopted July 2015). However, this site is located within 1km of multiple settlements including Funtington 410m to the east, Hambrook 600m to the south and West Ashling which is 1km to the east.</p> <p>There are no existing or allocated waste sites or existing mineral sites within 1km of the site. Therefore, neighbouring settlements are unlikely to experience cumulative effects on amenity.</p> <p>However, Hambrook Mobile Civic Amenity Site on Marlpit Lane, is a mobile site used by of the community. However, it is unlikely to have a cumulative effect in combination with this proposed site, as the Amenity Site is a mobile site and therefore not permanent and unlikely to lead to cumulative effects.</p> <p>Also, the proposed site is within 1km of other proposed sites which form part of the Hambrook Grouping. While all the individual sites will not be working</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			simultaneously, depending on the potential site operator, the processing area north of Woodmancote could be active while each site is operational. Therefore, there could also be cumulative effects on the amenity of local communities due to the processing area being active at the same time as this site.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+?	C+?	<p>There are no PROW or recreational facilities within 250m of this site. The WSCC/SDNPA site assessment study notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application</i>'.</p> <p>Therefore, this proposed site could have a minor positive effect on the amenity of users of PROW and other users of the countryside in the County. However, as the WSCC/SDNPA was unable to identify opportunities for enhancement through the site assessment process, it will not be possible to determine this until the planning application stage.</p> <p>The site could have a minor positive effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>The site is within 1km of the South Downs National Park.</p> <p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'low-medium' sensitivity to extraction and 'moderate to high' capacity overall for accommodating mineral extraction.</p> <p>The study states that <i>'the landscape character and the landscape value of the site is judged to be low, but the high visibility of the site in the surrounding landscape and intervisibility with the South Downs makes it of slightly higher sensitivity. While development of mineral workings in this location has the potential to be visually intrusive from surrounding areas, there is scope to reduce visibility into the site from the immediate vicinity through screening or filtering views with vegetation.'</i> Furthermore, <i>'There is considerable scope for the improvement of the current condition of landscape features, visual amenity and habitat value in conjunction with the development of the site.'</i></p> <p>Therefore, development at this site is considered to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --?</p> <p>R --?</p> <p>C --?</p>	<p>The WSCC site assessment study has noted that <i>'the Funtington West Site contains two areas of Ancient Woodland (SU795086 and SU787084).'</i> Both of these Ancient Woodland sites are within 500m to the north of this site (which is just south of Funtington West), the closest being 230m northwest of the site.</p> <p>In terms of international sites, this site lays approximately 2.7km north Chichester and Langstone Harbours SPA/Ramsar, and Solent Maritime SAC and</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>2.7km southwest of Kingley Vale SAC.</p> <p>The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration. The HRA report concluded that overall, development at this site is unlikely to cause harm to international sites or other sites within West Sussex. However, it was noted that transport assessments for these sites should take into account any impacts on sites in Hampshire and Surrey County Councils if a significant increase in movements on the A27 and A3 is likely. Although an adverse effect was ruled out on the integrity of the international sites, a significant negative effect is still likely as this site is within close proximity to Ancient Woodland. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>It is considered that the site could have a significant negative effect on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>This site is not within 500m of a national site of geological interest (SSSI) or Local Geological Site. Therefore, development at this site is considered unlikely to affect this objective.</p> <p>The site is considered unlikely to have any effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity of 'low-medium'.</p> <p>Funtington Conservation Area includes Grade II Listed Buildings and is 420m to the east of this site. In addition, this site is within close proximity to two Historic Parksapes. Asdean Park, which also includes Grade II Listed Buildings is 725m to the north and Hambrook House, which includes a Grade II Listed Building is 660m to the south. Balsam's Farmhouse Grade II Listed Building is also 420m south east of the site. Racton Park Farmhouse Grade II Listed</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Building is 950m north west of this site.</p> <p>The LUC 2015 Study notes that <i>'there are no Listed Buildings in close proximity. However, there are some Listed Buildings to the north (including Grade II Listed Buildings Ractonpark Farmhouse and Adsdean House (West Lodge))'. Given the presence of rising land to the north, working of this site for mineral extraction may negatively affect the setting of these Listed Buildings.'</i> Furthermore, <i>'there are clear views to the eastern edge of the Conservation Area. Working on the site could have negative implications for this heritage area.'</i></p> <p>The WSCC/SDNPA site assessment study also notes that this sites <i>'includes the site of one of the runways of the World War 2 Funtington Advanced Landing Ground: buried wartime airfield features may survive. Roman finds have previously been reported from the former airfield site, and finds of prehistoric worked flint and pottery have been recovered from near the site. Other archaeological finds may lie within the site. The site may overlie ancient prehistoric shoreline deposits.'</i></p> <p>The WSCC/SDNPA site assessment also states that development at this site would be acceptable in relation to archaeology <i>'provided that impacts upon any buried archaeological remains can satisfactorily be mitigated.'</i> The site assessment also states that an archaeological, geoarchaeological impact assessment would be required (including archaeological desk-based assessment and non-invasive and invasive field evaluation). The field evaluation should be completed Undertaken pre-determination and the results made available to consider at the application stage. Therefore, this site is considered likely to have a minor negative effect on this objective. However, these effects would be uncertain as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is small (13.46 ha) and is entirely located on grade 3b agricultural land. Therefore a minor negative effect on protecting or enhancing soil/land quality is</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			likely. This site is likely to have a minor negative effect on regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>.This site not located within 1km of an Air Quality Management Area, but the WSCC/SDNPA notes that <i>'traffic from this site may pass through the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285-St Pancras).'</i> The site assessment also states that <i>'if traffic would have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required.'</i></p> <p>The WSCC/SDNPA site assessment study notes that, in terms of access <i>'this site only has a frontage onto Marlpit Lane. There is a former gravel extraction site to the north and this has a separate access direct onto Common Road. Irrespective of whether a new access is created onto Marlpit Lane or the existing access reopened, a routing agreement is suggested to prevent HGV access and egress via the village of Woodmancote, which is to the south. In terms of general access routing, there are two broad options, either to use Common Road/B2136/B2147 to head east and west, or to use Common Road/B2136/Cheesemans Lane and head south to access the A259. Both routes would involve routing HGV traffic through residential village areas and therefore need to be carefully considered on balance. The option that has previously been supported would be to route traffic along Cheesemans Lane to the A259 so as to avoid the villages of Funtington, Ashling and Westbourne'</i>. In terms of international sites, The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration.</p> <p>It was concluded that the Hambrook grouping sites (which the Common Road East site is a part of) <i>'will not have adverse effects on air quality at any European designated sites within West Sussex, but that the transport assessments for these minerals sites should take into account any impacts on</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>sites in Hampshire and Surrey if there will be a significant increase in vehicle movements on the A27 and A3. A significant increase is defined as an increase of over 200 Heavy Duty Vehicles per day on either road from any minerals site. The West Sussex Minerals Local Plan: Transport Assessment (2015) estimated that there would be 108 two-way daily AADT movements and therefore does not represent a significant increase.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>The site is not located within SPZ1. Almost half of this site is located within SPZ 2/3 (north of Hairspring Watercress abstraction/spring). The site is not within or adjacent to a water body.</p> <p>According to the WSCC/SDNPA site assessment, Environment Agency maps indicate that the site is within groundwater vulnerability zone: Major aquifer (intermediate). It is also noted that a stage 1 Hydrogeological assessment would be required prior to allocation.</p> <p>At this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>This site is located within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the Hambrook site (which this site forms part of) was identified as having no effect (green) against most of the flooding sources. However, a low risk (yellow) was found in relation to surface water due to 10% of the site being at a higher risk. In addition, a negligible risk of susceptibility (amber) was found in relation to ground water, due to parts of site being at higher risk.</p> <p>Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'medium' acceptability rating, dependent on '<i>the outcome of Highways England proposals for the A27 Chichester bypass</i>'. Therefore, it could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a minor negative effect is likely for this objective.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to the Adopted Chichester Local Plan: Key Policies 2014-2029 Proposals Map, this site is within 10km of strategic allocations, as Westbourne is approximately 2.8km to the west and Southbourne is 2km to the southwest. Therefore, this site could potentially contribute to reducing transport distances of</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Slades Field M/CH/1D

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There are agricultural business and residential units within 100m to the south along West Ashling Road, and within 100m to the west, therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>There are no areas identified or allocated for residential development within 100m of the site in the Chichester Local Plan: Key Policies 2014-2029, (adopted July 2015). However, this site is located within 1km of multiple settlements, including Hambrook which is adjacent to the southern area of the site, and Funtington to the northeast.</p> <p>There are no existing or allocated waste sites or existing mineral sites within 1km of the site. Therefore, neighbouring settlements are unlikely to experience cumulative effects on amenity.</p> <p>However, Hambrook Mobile Civic Amenity Site on Marlpit Lane, is a mobile site used by of the community. However, it is unlikely to have a cumulative effect in combination with this proposed site, as the Amenity Site is a mobile site and therefore not permanent and unlikely to lead to cumulative effects.</p> <p>Also, the proposed site is within 1km of other proposed sites which form part of the Hambrook Grouping. While all the individual sites will not be working</p>

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			simultaneously, depending on the potential site operator, the processing area north of Woodmancote could be active while each site is operational. Therefore, there could also be cumulative effects on the amenity of local communities due to the processing area being active at the same time as this site.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	C-	<p>Public footpaths no. 3589 and 256 are within 250m of the south west of the site, and bridleway no. 254 and footpath no.255 are both 260m west of the site.</p> <p>The WSCC site assessment study notes that '<i>Opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>Therefore, this proposed site could have a minor negative effect on the amenity of users of PROW and other users of the countryside in the County.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the

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			<p>needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>The site is located approximately 1km to the south of the South Downs National Park. The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'low-medium' sensitivity to extraction. The study states that <i>'although the landscape character and the landscape value of the site are judged to be low, the high visibility of the site in the surrounding landscape and intervisibility with the South Downs and nearby settlements makes it of slightly higher sensitivity. While development of mineral workings in this location has the potential to be visually intrusive to surrounding areas, there is scope to reduce visibility into the site from the immediate vicinity, through screening or filtering of views with vegetation.'</i></p> <p>Therefore, development at this site is considered to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>There are patches of ancient woodland within 1km of this site. In addition, this site is 750m north of Newells Lane pond and meadows, Hambrook SNCI.</p> <p>In terms of international sites, this site lies approximately 2.5 km north of Chichester and Langstone Harbours SPA/Ramsar, and Solent Maritime SAC, and 3.3km southwest of Kingley Vale SAC.</p> <p>The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration. The HRA report concluded that overall, development at</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>this site is unlikely to cause harm to international sites or other sites within West Sussex. However, it was noted that transport assessments for these sites should take into account any impacts on sites in Hampshire and Surrey County Councils if a significant increase in movements on the A27 and A3 is likely. The West Sussex Minerals Local Plan: Transport Assessment (2015) has since estimated that there would be 108 two-way daily AADT movements and therefore does not represent a significant increase.</p> <p>Overall, a minor negative effect is likely, due to the proximity of this site to Ancient Woodland and the Newells Lane pond and meadows, Hambrook SNCI. However, this effect would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>This site is considered to have a minor negative effect on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>This site is not within 500m of a national site of geological interest (SSSI) or Local Geological Site. Therefore, development at this site is considered unlikely to affect this objective.</p> <p>The site is considered unlikely to have any effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity of 'low-medium'. Therefore, a minor negative effect is considered more likely.</p> <p>There are two Historic Parkscapes, which include Grade II Listed Buildings, within 1km of this site, the closest being Hambrook House (which includes the Lodge of Hambrook Grade II Listed Building) and Asdean Park, 940m to the north of the site. Balsam's Farmhouse Grade II Listed Building is 320m east of the site and Funtington Conservation Area is also approximately 480m to the northeast of the site.</p> <p>The LUC 2015 Addendum notes that '<i>the Lodge of Hambrook is not visible from</i></p>

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			<p><i>the site given current screening by high trees along the southern boundary. However, Balsam's Farmhouse would be clearly visible from the eastern boundary of the site, meaning working for mineral extraction may negatively affect the setting of this Listed Building. The Funtington Conservation Area is sited approximately 500m to the east. There are views to the eastern edge of the Conservation Area, but working on the site could have negative implications for this heritage area.'</i></p> <p>In addition, the WSCC/SDNPA site assessment notes that '<i>there are known and possible archaeological sites and finds in the vicinity of the land, and the site may overlie buried ancient shoreline deposits. Some archaeological non-invasive and invasive field evaluation (low-level sampling) in 1998 on the western half of the site only revealed no datable ancient archaeological features, a few prehistoric finds.'</i></p> <p>The WSCC/SDNPA site assessment notes that development at this site would be acceptable in relation to archaeology '<i>provided that impacts upon any buried archaeological remains can satisfactorily be mitigated.'</i> The site assessment also states that an archaeological, geoarchaeological impact assessment would be required (including archaeological desk-based assessment and non-invasive and invasive field evaluation). The field evaluation should be completed Undertaken pre-determination and the results made available to consider at the application stage. Therefore, this site is considered to 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.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is large (26.35 ha) and is mainly on grade 3b agricultural land, with a small part of grade 3a. Therefore, a minor negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>The WSCC/SDNPA site assessment study notes that, in terms of access '<i>this site only has a frontage onto Marlpit Lane. There is a former gravel extraction site to the north and this has a separate access direct onto Common Road. Irrespective of whether a new access is created onto Marlpit Lane or the existing access reopened, a routing agreement is suggested to prevent HGV access and egress via the village of Woodmancote, which is to the south. In terms of general access routing, there are two broad options, either to use Common Road/B2136/B2147 to head east and west, or to use Common Road/B2136/Cheesemans Lane and head south to access the A259. Both routes would involve routing HGV traffic through residential village areas and therefore need to be carefully considered on balance. The option that has previously been supported would be to route traffic along Cheesemans Lane to the A259 so as to avoid the villages of Funtington, Ashling and Westbourne.</i></p> <p>This site is not located within 1km of an Air Quality Management Area, but the WSCC/SDNPA site assessment notes that '<i>traffic from this site may pass through the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285-St Pancras).</i>' The site assessment also states that '<i>if traffic would have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required.</i>'</p> <p>In terms of international sites, The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration.</p> <p>It was concluded that the Hambrook grouping sites (which the Slades Field site is a part of) '<i>will not have adverse effects on air quality at any European designated sites within West Sussex, but that the transport assessments for these minerals sites should take into account any impacts on sites in Hampshire and Surrey if there will be a significant increase in vehicle movements on the A27 and A3. A significant increase is defined as an increase of over 200 Heavy</i></p>

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			<p><i>Duty Vehicles per day on either road from any minerals site.</i> The West Sussex Minerals Local Plan: Transport Assessment (2015) estimated that there would be 108 two-way daily AADT movements and therefore does not represent a significant increase.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>The site is not located within SPZ1. Almost half of this site is located within SPZ 2/3 (north of Hairspring Watercress abstraction/spring). The site is not within or adjacent to a water body.</p> <p>According to the WSCC/SDNPA site assessment, Environment Agency maps indicate that the site is within groundwater vulnerability zones: Major aquifer (intermediate). It is also noted that a stage 1 Hydrogeological assessment would be required prior to allocation.</p> <p>At this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate	-?	R -?	<p>This site is located within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the Hambrook site (which this site forms part of) was identified as having no effect (green) against most of the flooding sources. However, a low risk (yellow) was found in relation to surface</p>

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development in the floodplain.			<p>water due to 10% of the site being at a higher risk. In addition, a negligible risk of susceptibility (amber) was found in relation to ground water, due to parts of site being at higher risk.</p> <p>Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'medium' acceptability rating, dependent on '<i>the outcome of Highways England proposals for the A27 Chichester bypass</i>'. Therefore, it could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a minor negative effect is likely for this objective.</p> <p>The site could have a minor negative effect on regulating ecosystem services</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to the Adopted Chichester Local Plan: Key Policies 2014-2029 Proposals Map, this site is within 10km of strategic allocations, as Westbourne is approximately 3km to the west and Southbourne is 2km to the southwest. Therefore, this site could potentially contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor</p>

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			<p>negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Funtington West M/CH/1G

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>Funtington Village lies adjacent to the eastern area of the site in addition to properties on Hares Lane and properties to the north and the Research Establishment to the south. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>There are no areas identified or allocated for residential development within 100m of the site in the Chichester Local Plan: Key Policies 2014-2029, (adopted July 2015). However, this site is located within 1km of additional settlements, including Hambrook which is approximately 960m south and West Ashling.</p> <p>There are no existing or allocated waste sites or existing mineral sites within 1km of the site. Therefore, neighbouring settlements are unlikely to experience cumulative effects on amenity.</p> <p>However, Hambrook Mobile Civic Amenity Site on Marlpit Lane, is a mobile site used by of the community. However, it is unlikely to have a cumulative effect in combination with this proposed site, as the Amenity Site is a mobile site and therefore not permanent and unlikely to lead to cumulative effects.</p> <p>Also, the proposed site is within 1km of other proposed sites which form part of the Hambrook Grouping. While all the individual sites will not be working simultaneously, depending on the potential site operator, the processing area north of Woodmancote could be active while each site is operational. Therefore,</p>

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			there could also be cumulative effects on the amenity of local communities due to the processing area being active at the same time as this site.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	++/-?	C++/-	<p>There are two recreational facilities within 250m of this site. Bridleway no. 254 and footpath is adjacent to the western boundary of the site. In addition, Bridleway no.483 is also 130m to the north of the site on the opposite side of Hares Lane. Therefore, the site could have a minor negative effect on the amenity of users of PROW by making the facilities less attractive for users and impacting on amenity.</p> <p>The WSCC/SDNPA site assessment study notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i> Furthermore, the site assessment states that the '<i>creation of a new public bridleway connecting bridleway 254 with a point immediately south of Adsdean Park Road would be sought, providing a valuable local off-road connection for NMUs as an alternative to Hares Lane, where vehicles can speed and visibility around corners is not conducive for NMUs (and drivers') safety.</i>' Therefore, a significant positive effect is likely in relation to the potential major enhancement of the PROW.</p> <p>Therefore, this proposed site could have a mixed significant positive/minor negative effect on the amenity of users of PROW and other users of the countryside in the County.</p> <p>The site could have a mixed significant positive/minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex economy; and given that the overall number of mineral sites likely to be

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		ecosystem service.	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.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	--	C --	<p>The northern area of the site is adjacent to the South Downs National Park.</p> <p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'medium-high' to extraction and a 'low-moderate' capacity for accommodating mineral extraction.</p> <p>The 2015 Study states that <i>'the site has a Medium visual sensitivity as it is only visible from a number of fields and Common Road to the South, and the northern extents of the site are less visually exposed. The landscape character and landscape value are judged to be Medium-High: the southern part is larger in scale and has been degraded by intensive pig farming, but the north has a rural character and provides a buffer between the urbanised nature of the road corridor to the south and the National Park to the north. The areas of intact field boundary structure and the two small ancient woodlands also add value. This site has a Low-Moderate capacity for accommodating mineral extraction but if works were restricted to the southern part of the site, capacity would be Moderate.'</i></p> <p>Therefore, development at this site is considered to have a significant negative</p>

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			effect on designated landscapes, local landscape character or tranquillity. The site could have a significant negative effect on cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --?</p> <p>R --?</p> <p>C --?</p>	<p>The WSCC/SDNPA site assessment study has noted that '<i>the Funtington West Site contains two areas of Ancient Woodland (SU795086 and SU787084) and a buffer of between 20 and 100m between mineral working and Ancient Woodland would be required.</i>'</p> <p>In terms of international sites, this site lies approximately 3.5km north of Chichester and Langstone Harbours SPA/Ramsar, and Solent Maritime SAC and is 2km southwest of Kingley Vale SAC. The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration. The HRA report concluded that overall, development at this site is unlikely to cause harm to international sites or other sites within West Sussex. However, it was noted that transport assessments for these sites should take into account any impacts on sites in Hampshire and Surrey County Councils if a significant increase in movements on the A27 and A3 is likely. The West Sussex Minerals Local Plan: Transport Assessment (2015) has since estimated that there would be 108 two-way daily AADT movements and therefore does not represent a significant increase.</p> <p>Although an adverse effect was ruled out on the integrity of the international sites, a significant negative effect is likely as this site contains Ancient Woodland. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>The potential effects of development are considered to have a significant negative affect on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	This site is not within 500m of a national site of geological interest (SSSI) or Local Geological Site. Therefore, development at this site is considered unlikely

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			<p>to affect this objective.</p> <p>The site is considered unlikely to have any effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity of 'low-medium'. Therefore, a minor negative effect is considered more likely. These effects would be uncertain as a more detailed assessment would be required once proposals are known.</p> <p>Funtington Conservation Area abuts the eastern boundary of the site and contains a number of listed buildings. Other cultural heritage sites nearby include two Historic Parksapes within 1km of this site, the closest is immediately adjacent to the site at Asdean Park, which also includes Grade II Listed Buildings. Hambrook House, which includes a Grade II Listed Building is 960m to the south of the site. To the west, there are three Grade II Listed Buildings: Ractonpark Farmhouse, 690m away and Racton Church and Church Cottage 990m away.</p> <p>The LUC 2015 Addendum notes that '<i>views into the site from the conservation area are not possible due to intervening built form and vegetation. There may be occasional glimpsed views in the winter months due to the deciduous nature of the surrounding vegetation. Given the presence of rising land to the north, working of this site for mineral extraction may have limited negative impact upon the setting of these Listed Buildings.</i>'</p> <p>In addition, the WSCC/SDNPA site assessment notes that '<i>finds of prehistoric worked flint and pottery have been recovered within part of the site, and other buried prehistoric features and finds have previously been reported to the north-west from near the site. Other archaeological finds may lie within the site. The north-west corner of the site lies close to the projected alignment of the buried Slindon Raised Beach cliff line, a zone where, further east, internationally important early prehistoric archaeological deposits exist. Similar artefact-bearing deposits could exist within this land.</i>'</p>

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			<p>The WSCC/SDNPA site assessment also states that development at this site would be acceptable in relation to archaeology <i>'provided that impacts upon any buried archaeological remains can satisfactorily be mitigated.'</i> The site assessment also states that an archaeological, geoarchaeological impact assessment would be required (including archaeological desk-based assessment and non-invasive and invasive field evaluation). The field evaluation should be completed Undertaken pre-determination and the results made available to consider at the application stage.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is large (26.35 ha). The northern half of the site is located on grade 3a agricultural land, while the southern half is on grade 3b agricultural land. Therefore, a minor negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>This site is not located within 1km of an Air Quality Management Area but the WSCC/SDNPA notes that <i>'traffic from this site may pass through the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285-St Pancras).'</i> The site assessment also states that <i>'if traffic would have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required.'</i></p> <p>The WSCC/SDNPA site assessment study notes that, in terms of access <i>'this site only has a frontage onto Marlpit Lane. There is a former gravel extraction site to the north and this has a separate access direct onto Common Road. Irrespective of whether a new access is created onto Marlpit Lane or the existing access reopened, a routing agreement is suggested to prevent HGV access and egress via the village of Woodmancote, which is to the south. In terms of general access routing, there are two broad options, either to use Common</i></p>

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			<p>Road/B2136/B2147 to head east and west, or to use Common Road/B2136/Cheesemans Lane and head south to access the A259. Both routes would involve routing HGV traffic through residential village areas and therefore need to be carefully considered on balance. The option that has previously been supported would be to route traffic along Cheesemans Lane to the A259 so as to avoid the villages of Funtington, Ashling and Westbourne'. In terms of international sites, The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration.</p> <p>It was concluded that the Hambrook grouping sites (which the Funtington West site is a part of) 'will not have adverse effects on air quality at any European designated sites within West Sussex, but that the transport assessments for these minerals sites should take into account any impacts on sites in Hampshire and Surrey if there will be a significant increase in vehicle movements on the A27 and A3. A significant increase is defined as an increase of over 200 Heavy Duty Vehicles per day on either road from any minerals site. The West Sussex Minerals Local Plan: Transport Assessment (2015) estimated that there would be 108 two- way daily AADT movements and therefore does not represent a significant increase.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors, although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water	?	R ?	The site is not located within SPZ1. Almost half of this site is located within SPZ 2/3 (north of Hairspring Watercress abstraction/spring). The site is not within or

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
resources, water quality and the function of the water environment.			<p>adjacent to a water body.</p> <p>According to the WSCC/SDNPA site assessment, Environment Agency maps indicate that the site is within groundwater vulnerability zone: Major aquifer (intermediate). It is also noted that a stage 1 Hydrogeological assessment would be required prior to allocation.</p> <p>At this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>This site is located within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the Hambrook site (which this site forms part of) was identified as having no effect (green) against most of the flooding sources. However, a low risk (yellow) was found in relation to surface water due to 10% of the site being at a higher risk. In addition, a negligible risk of susceptibility (amber) was found in relation to ground water, due to parts of site being at higher risk.</p> <p>Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry	-	R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'medium' acceptability rating, dependent on <i>'the outcome of Highways England proposals for the A27 Chichester bypass'</i>. Therefore, it could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
Route Network.			<p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a minor negative effect is likely for this objective.</p> <p>The site could have a minor negative effect on regulating ecosystem services</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to the Adopted Chichester Local Plan: Key Policies 2014-2029 Proposals Map, this site is within 10km of strategic allocations, as Westbourne is approximately 2.7km to the west and Southbourne is 2.5m to the southwest. Therefore, this site could potentially contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Processing Area M/CH/PA1

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There are residential and agricultural business within 100m of the site along Common Road, and residential buildings adjacent to the western boundary of the site. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, a minor negative uncertain effect is likely.</p> <p>There are no areas identified or allocated for residential development within 100m of the site in the Chichester Local Plan: Key Policies 2014-2029, (adopted July 2015). However, this site is located within 1km of the settlements of Woodmancote approximately 400m to the south and Hambrook, 450m to the southeast.</p> <p>There are no existing or allocated waste sites or existing mineral sites within 1km of the site. Therefore, neighbouring settlements are unlikely to experience cumulative effects on amenity.</p> <p>.However, Hambrook Mobile Civic Amenity Site on Marlpit Lane, is a mobile site used by of the community. However, it is unlikely to have a cumulative effect in combination with this proposed site, as the Amenity Site is a mobile site and therefore not permanent and unlikely to lead to cumulative effects.</p> <p>Also, the proposed processing site is within 1km of proposed extraction sites which form part of the Hambrook Grouping. While all the individual sites will not be working simultaneously, depending on the potential site operator, the</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			processing area could be active while each site is operational. Therefore, there could also be cumulative effects on the amenity of local communities due to the processing area being active at the same time as individual sites.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	C-	<p>Public Bridleway no.250 runs north to south through the western area of the site. In addition there are other footpaths located within 250m of the site, the closest being Footpath no. 249, which is adjacent to the western area of the site. Bridleway no's.508 and 509 are also adjacent to the northern area of the site on the opposite side of Common Road. The WSCC/SDNPA site assessment notes <i>that 'opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.'</i></p> <p>Therefore, this proposed site could have a minor negative effect on the amenity of users of PROW and other users of the countryside in the County, by making the facilities / countryside less attractive for users and impacting on amenity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient	+	S -	New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
for the needs of society.			<p>development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>The processing area is adjacent to the South Downs National Park. The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'low-medium sensitivity' in landscape and visual terms to use as a processing site. However, the Study states that this judgement is subject to <i>'further assessment of the potential impact of noise from processing works and vehicular movements on the tranquillity and sense of remoteness identified as key sensitivities of South Downs National Park. There would be limited visual intrusion on sensitive views.'</i></p> <p>Therefore, development at this site is considered likely to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --?</p> <p>R --?</p> <p>C --?</p>	<p>The WSCC/SDNPA site assessment identifies the River Ems and Meadows Site (SNCI) within 250m of the west of the site. In addition, Ractonpark Wood is an Ancient Woodland site and is located opposite the site to the north side of Common Road.</p> <p>In terms of international sites, this site lies approximately 2.5km north of Chichester and Langstone Harbours SPA/Ramsar, and Solent Maritime SAC and 3km southwest of Kingley Vale SAC.</p> <p>The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration. The HRA report concluded that overall, development at</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>this site is unlikely to cause harm to international sites or other sites within West Sussex. However, it was noted that transport assessments for these sites should take into account any impacts on sites in Hampshire and Surrey County Councils if a significant increase in movements on the A27 and A3 is likely. The West Sussex Minerals Local Plan: Transport Assessment (2015) has since estimated that there would be 108 two- way daily AADT movements and therefore does not represent a significant increase.</p> <p>Although an adverse effect was ruled out on the integrity of the international sites, a significant negative effect is still likely, due to the proximity of this site to the ancient woodland at Ractonpark Wood, River Ems and Meadows Site (SNCI). However, this effect would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>A significant negative effect is also considered likely in relation to the provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>This site is not within 500m of a national site of geological interest (SSSI) or Local Geological Site. Therefore, development at this site is considered unlikely to affect this objective.</p> <p>The site is considered unlikely to have any effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity of 'low'.</p> <p>There are five cultural heritage assets within 1km of this site. The nearest sites are two Grade II Listed buildings to the south within Woodmancote. This includes The Manor House, which is 480m away and Woodmancote Farmhouse which is 680m away. To the south, Newell House is 950m away while Hambrook House Historic Parkway and Listed Building are approximate 810m away.</p> <p>The WSCC/SDNPA site assessment also states that development at this site would be acceptable in relation to archaeology <i>'provided that impacts upon any</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p><i>buried archaeological remains can satisfactorily be mitigated.'</i> The site assessment also states that an archaeological, geoarchaeological impact assessment would be required (including archaeological desk-based assessment and non-invasive and invasive field evaluation). The field evaluation should be completed Undertaken pre-determination and the results made available to consider at the application stage.</p> <p>Therefore, this site is considered to 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.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site entirely on grade 3 agricultural land. Therefore a minor negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>The WSCC/SDNPA site assessment study notes that, in terms of access '<i>this site only has a frontage onto Marlpit Lane. There is a former gravel extraction site to the north and this has a separate access direct onto Common Road. Irrespective of whether a new access is created onto Marlpit Lane or the existing access reopened, a routing agreement is suggested to prevent HGV access and egress via the village of Woodmancote, which is to the south. In terms of general access routing, there are two broad options, either to use Common Road/B2136/B2147 to head east and west, or to use Common Road / B2136 / Cheesemans Lane and head south to access the A259. Both routes would involve routing HGV traffic through residential village areas and therefore need to be carefully considered on balance. The option that has previously been supported would be to route traffic along Cheesemans Lane to the A259 so as to avoid the villages of Funtington, Ashling and Westbourne</i>'.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>This site is not located within 1km of an Air Quality Management Area but the WSCC/SDNPA site assessment notes that <i>'traffic from this site may pass through the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285-St Pancras).'</i> The site assessment also states that <i>'if traffic would have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required.'</i> In terms of international sites, The Hambrook Grouping (which this site forms part of) was 'screened in' for Appropriate Assessment in the 2015 Habitat Regulation Assessment because of the possibility of adverse effects due to exhaust emissions which required further consideration.</p> <p>It was concluded that the Hambrook grouping sites (which the processing area site is a part of) <i>'will not have adverse effects on air quality at any European designated sites within West Sussex, but that the transport assessments for these minerals sites should take into account any impacts on sites in Hampshire and Surrey if there will be a significant increase in vehicle movements on the A27 and A3. A significant increase is defined as an increase of over 200 Heavy Duty Vehicles per day on either road from any minerals site. The West Sussex Minerals Local Plan: Transport Assessment (2015) estimated that there would be 108 two- way daily AADT movements and therefore does not represent a significant increase.'</i></p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water	?	R ?	The site is not located within SPZ1. Almost half of this site is located within SPZ 2/3 (north of Hairspring Watercress abstraction/spring). The site is not within or

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
resources, water quality and the function of the water environment.			<p>adjacent to a water body.</p> <p>According to the WSCC/SDNPA site assessment, Environment Agency maps indicate that the site is within groundwater vulnerability zone: Major aquifer (intermediate). It is also noted that a stage 1 Hydrogeological assessment would be required prior to allocation.</p> <p>At this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>This site is located within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the Hambrook site (which this site forms part of) was identified as having no effect (green) against most of the flooding sources. However, a low risk (yellow) was found in relation to surface water due to 10% of the site being at a higher risk. In addition, a negligible risk of susceptibility (amber) was found in relation to ground water, due to parts of site being at higher risk.</p> <p>Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry	-	R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'medium' acceptability rating, dependent on <i>'the outcome of Highways England proposals for the A27 Chichester bypass'</i>. Therefore, it could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
Route Network.			<p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a minor negative effect is likely for this objective.</p> <p>The site could have a minor negative effect on regulating ecosystem services</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to the Adopted Chichester Local Plan: Key Policies 2014-2029 Proposals Map, this site is within 10km of strategic allocations, as Westbourne is approximately 1.2km to the west and Southbourne is 1.3km to the south. Therefore, this site could potentially contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Brick Kiln Farm M/CH/4F

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There are businesses and residential units within 100m to the eastern and southern boundaries. There are also residential and business units to the north of the A259 Bognor Road. Portfield Trade Centre and Quarry Lane industrial estate are to the northwest, separated by the A27 (Chichester by-pass). Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>There are no areas identified or allocated for residential development in the Chichester Local Plan: Key Policies 2014-2029, (adopted July 2015). Therefore there is no potential for land conflicts on this site.</p> <p>This site is also 265m north east of Chichester Lakeside Holiday Park and Chichester which is 260m north west and separated from the site by Portfield Trade Centre and Quarry Lane industrial estate, the A27 (Chichester by-pass) and a rail line. In addition, this site is adjacent to the south of Fuel Depot Bognor Road waste site which is allocated in the West Sussex Waste Local Plan.</p> <p>In addition, there are five existing minerals and waste sites within 1km of this proposed site. To the north opposite the A259 Bognor Road there are two waste transfer sites on Oving Road. To the northwest in the Portfield Trade Centre area is M&J Spares and Repairs recycling centre. Peckhams Copse recycling centre on North Mundham is 720m southwest of the site, while the Green Waste</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Composting site at Walnut Tree Farm, is 855m to the southeast. Therefore, this site could have a cumulative effect on the local community.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	++/-	C++/-	<p>There are three Public Footpaths within 250m of the site. Public Bridleway no. 2792 runs along the southern boundary of the site, while Bridleway no.192 lies to the west of the site 20m away. Public footpath no. 3022 is 95m away to the northwest within the Portfield Trade Centre. <i>'The WSCC/SDNPA site assessment states that 'there is likely to be an impact upon PROW, particularly bridleway 2792 which runs along the southern boundary of the site. The impacts are likely to be resolvable through mitigation measures such as diversion, screening, or stand offs.'</i> Therefore, the site could have a minor negative effect on the amenity of users of PROW by making the facilities less attractive for users and impacting on amenity.</p> <p>However, the WSCC/SDNPA site assessment states that <i>'opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application'</i> and that <i>'there is an ambition to create a new public bridleway linking bridleway 192, across Vinnetrow Lane to bridleway 2792.'</i> Therefore, a significant positive effect is likely in relation to the potential major enhancement of the PROW.</p> <p>Therefore, this proposed site could have a mixed significant positive/minor negative effect on the amenity of users of PROW and other users of the countryside in the County. The site could have a mixed significant positive/minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
		ecosystem service.	of new employment opportunities likely to be provided within the County is not considered to be significant.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C 0	<p>The site is located 3.5km south of the SDNP boundary and is in a Zone of Visual Influence of Chichester Cathedral Spire and the Zone of visibility from the Trundle.</p> <p>The LUC 2011 Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'low' and a 'high' overall capacity to accommodate mineral activities. Data indicated that the site is within an area of medium tranquillity and an area defined as 'disturbed by noise'.</p> <p>Table 4.4 of the 2011 Study summarises the key landscape, visual and landscape value sensitivities and issues. It is noted that <i>'the open nature of the surrounding area, its proximity to heavily used roads and nearby residential properties results in large numbers of visual receptors and a high degree of visibility. However, due to the flat landform there is potential to reduce views into the site from the surrounding area. It is a site already modified by development, with existing disturbance from busy roads, and located within the context of former large scale gravel workings, which are now restored to a complex of artificial lakes. There is considerable scope for the improvement of the current condition of landscape features, visual amenity and habitat value in</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p><i>conjunction with the development of the site.'</i></p> <p>Therefore, development at this site could have a negligible effect on designated landscapes, local landscape character and/or tranquillity.</p> <p>The site could have a negligible effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --?</p> <p>R --?</p> <p>C --?</p>	<p>According to the WSCC/SDNPA site assessment study, this site is adjacent to Chichester Gravel Pits & Leythorne Meadow SNCI (former mineral workings) and may cause minor harm to these designations in the absence of mitigation measures. However, it is noted that '<i>restoration to create further wetland habitats might complement and enhance ecological value of the adjacent wetlands.</i>'</p> <p>In terms of international sites, this site lies approximately 4km east of Solent Maritime SAC and Chichester and Langstone Harbours SPA/Ramsar, and approximately 8km northwest of Kingley Vale SAC. Therefore, this site was 'screened out' of the Habitat Regulation Assessment 2015 because it was considered that there was to be no scope for adverse impacts on European sites.</p> <p>Therefore, a significant negative effect is considered likely for this objective due to the site being adjacent to the Chichester Gravel Pits & Leythorne Meadow SNCI. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>The site could have a significant negative effect on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>This site is not within 500m of a national site of geological interest (SSSI) or Local Geological Site. Therefore development at this site is considered unlikely to affect this objective.</p> <p>The site is considered unlikely to have an effect on cultural ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>There are several Grade II Listed Buildings within 1km of this site. To the north of the site there are five Grade II Listed Buildings, the closest being Drayton House 260m northeast of the site. There are a cluster of three buildings: Sycamores, Wall and Outhouse or Cottage to the East of No 159 and the Barn to the north of No 159, which are approximately 870m away from the site. To the south, Vinetrow Farmhouse is 55m away, the Old Parsonage is 865m away, and Merston House is 980m away. To the west there are a cluster of Listed Buildings on Whyke Road, including Outbuilding to the west of Barnwhyke Flats which is 875m away and Whyke Grange which is 850m away.</p> <p>The WSCC/SDNPA site assessment notes that '<i>as a large site on the archaeologically rich Sussex coastal plain, the presence below ground of other ancient archaeological features should be anticipated.</i>' The site assessment also states that ring ditches (which often surrounded prehistoric ceremonial mounds) in the northwest corner of the sit, are visible on aerial photographs.</p> <p>The site assessment states that there is the potential for concentrations of archaeological features of prehistoric and Roman features, as these were found at the Drayton North and Drayton South gravel pits nearby to the north and northeast. Furthermore, Brick Kiln Farm is the site of a 19th-century brickworks, therefore any surviving buried remains of former kilns and associated brickworks structures may be of industrial archaeological interest.</p> <p>The site assessment also states that the site includes the northern part of the former World War 2 Merston Airfield. There is a possibility that structures belonging to the former Airfield, of military archaeological interest, may survive as buried foundations below ground. The site may also overlie buried ancient shoreline deposits. A Palaeolithic flint hand axe has been recorded from the site. The WSCC/SDNPA site assessment states that development would be acceptable provided that acceptable mitigation is implemented to protect the visual impact upon the Listed Buildings and any buried archaeological remains. Furthermore it is recommended that an archaeological, geoarchaeological impact assessment is required (including archaeological desk-based assessment and non-invasive and</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>invasive field evaluation), and surveys should be carried out and submitted with any planning application.</p> <p>Therefore, this site is considered to 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.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	--	R --	<p>This site is large (47.29 ha) and is mainly on grade 2 agricultural land , with small areas on Grade 3a and 3b agricultural land. Therefore, a significant negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site is likely to have a significant negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>The WSCC/SDNPA site assessment states that the site appears to have two vehicular accesses onto the A259, with one of these serving the existing Brick Kiln Farm garden centre. The first on the A259 <i>'is a dual carriageway with a 70mph speed limit, and access would be achieved onto the westbound carriageway, while the second on 'Vinnetrow Road has a 40mph limit speed limit and is single carriageway, although is wide enough to enable two HGVs to pass. Both roads join the A27 at the Bognor Road roundabout.'</i> Therefore, it would be expected that HGV traffic would access the site only via the A259 and the A27.</p> <p>This site is not located within 1km of an Air Quality Management Area; however, the WSCC/SDNPA site assessment states that <i>'traffic from this site may pass through the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285- St Pancras).'</i> As a result, <i>'mitigation measures should be employed to minimise the impact on noise and air quality.'</i> The West Sussex Minerals Local Plan: Transport Assessment (2015) identified that there would be</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>72 two-way daily AADT movements.</p> <p>In terms of international sites, this site was 'screened out' of the Habitat Regulation Assessment 2015 because it was considered that there was to be no scope for adverse impacts on European sites. It is considered that development at this site is unlikely to result in HDV flows along roads within the West Sussex Lorry Route that are within 200m of international designated nature conservation sites.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>The site is not located within SPZ1. According to the WSCC/SDNPA site assessment study the Environment Agency maps indicate that the site is within groundwater vulnerability zones: Major aquifer (intermediate) and minor aquifer (high). Environment Agency Maps also indicate that the site is within groundwater vulnerability zones: Minor aquifer (high) and minor aquifer (intermediate). The site assessment also highlights that the Environment Agency has recommended t a '<i>Phase 1 qualitative hydrological and hydrogeological risk assessment</i>' is undertaken prior to allocation.</p> <p>Therefore, at this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			It is uncertain what effect this site will have on regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>Most of this site is located within Flood Zone 1, although parts of the northern area of the site are located within Flood Zone 2. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) this site is identified as having no effect (green) on three of the flooding sources, but identified fluvial flood as a moderate (yellow) risk due to 5% of the site being within Flood Zone 2. 5% of the site was found to be at higher risk (yellow) for surface water flooding. A medium risk (amber) was also identified in relation to sewers and artificial sources, while a 40% high risk and 20% moderate risk (red) was identified for groundwater flooding. Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'medium' acceptability rating and therefore could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a minor negative effect is likely for this objective.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to the Adopted Chichester Local Plan: Key Policies 2014-2029 Proposals Map, this site is within 10km of two strategic housing locations. The first is at Westhampnett / North East Chichester, which is approximately 2km</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>north and the second is at Shopwyke approximately 1km north of the site. Therefore, this site could potentially contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

East of West Heath Common M/CH/7B

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>The site is not located within 100m of any sensitive receptors. The nearest sensitive receptors are buildings at Down Park Farm Cottages located within 120m to the southwest of the site. The closest settlement is Nyewood which is located over 500m to the south of the site. Therefore the site is unlikely to have effects on health and local amenity.</p> <p>This site is located within the South Downs National Park. The South Downs National Park Plan is currently at Preferred Options Consultation stage, which closed on 28th October 2015. Allocations have been identified for Petersfield and Rogate, however it is unlikely that there will be any land use conflicts with this proposed site.</p> <p>In addition, this site is over 1km of an allocated waste site in the West Sussex Waste Local Plan, however it is within 1km of West Heath Quarry (which this site will form an extension to), therefore it is considered cumulative effect will be likely on the local community.</p> <p>The site is not within 100m of an existing waste site, or an allocated waste site in the West Sussex Waste Local Plan. The site is located within 500m of West Heath Quarry (which this site will form an extension to), and therefore continued working of this site will result in cumulative effects on the amenity of the local community of Nyewood. Therefore, a minor negative uncertain effect is likely.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	C -	<p>This site is within the South Downs National Park. Public Footpath no. 861 is located to the northwest of the proposed site, which runs northwards along the eastern boundary of the existing quarry (which this site forms part of). This footpath forms part of the Serpent Trail. In addition, Footpath no. 862 is located 230m to the west of the site. Therefore, this proposed site could have a minor negative effect on the amenity of users of PROW and other users of the countryside in the County, or enjoyment of the National Park by making the facilities/countryside less attractive for users and impacting on amenity.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>The WSCC site assessment study also notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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. Furthermore, as the site is an extension to an existing site, there may not be a net increase in employment but a continuation in employment.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>This site is located within the South Downs National Park.</p> <p>The 2015 SDNPA Supplement to the 2011 Landscape Capacity and Sensitivity Study assessed this site as having an overall landscape sensitivity of 'medium'.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>The Study notes that <i>'although the visual sensitivity is judged to be medium, the character and features of the site are representative of and contribute to the key characteristics and special qualities of the wider character area within the South Downs National Park.'</i> The 2011 Study also states that <i>'Data indicates that the site is within an area where tranquillity is rated slightly above medium and is within an area defined as 'disturbed by noise', bordering an 'undisturbed' area'</i></p> <p>Therefore the site is considered likely to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	<p>P -</p> <p>R -</p> <p>C -</p>	<p>This site is approximately 450m south east of West Heath Common SNCI (SNCI C64). The WSCC/SDNPA site assessment states that the West Heath Common SNCI <i>'consists of the existing quarry and permitted extension area. The area within this SNCI is notable for supporting four species of reptile and important wet heath habitat. Records show it supports breeding nightjar and has supported woodlark.'</i> Furthermore, <i>'the River Rother SNCI (SNCI C069 H53) follows the course of the River Rother approximately 0.3km north of the site. Brick kiln Copse, Pondtail Plantation, Millhanger Copse, Harting Pond and Stream SNCI (SNCI C048) is located approximately 0.2km to the southwest of the site.'</i></p> <p>In addition, there are a number of Ancient Woodland sites within 2km of the site, the WSCC, study notes that the closest is <i>'located within 25 metres of the eastern boundary of the site.'</i></p> <p>Fyning Moor SSSI is located approximately 1.5km to the northeast of the site. The site is also 6km south of Wealden Heaths Phase II SPA, 6.5km south east of East Hampshire Hangers SAC, 7km east of Buster Hill SAC and 4.5km north of Rock Cliff SAC. The WSCC/SDNPA site assessment also notes that <i>'this site lies adjacent to a watercourse that drains to the river Rother and ultimately into the Arun Valley SPA/Ramsar.'</i> There is therefore a potential pathway for sediment to impact this European site. This site was therefore 'screened in' for Appropriate Assessment as part of the Habitat Regulation Assessment 2015.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>The HRA report noted that <i>'Assuming quarry traffic uses the A3 via A272, there is potential for an impact pathway via traffic emissions to the Wealden Heaths Phase II SPA so this site has been screened in for further consideration. Furthermore this site contains and is adjacent to a watercourse that drains to the River Rother and ultimately into the Arun Valley SPA/Ramsar. There is therefore a potential pathway for sediment to impact this European site'</i>.</p> <p>With reference to air quality, the report concluded that <i>'based on current information there is no reason to conclude that this proposed minerals site will have adverse effects on air quality at any European designated sites but transport assessments undertaken for this site should take into account any impacts on Wealden Heaths Phase 2 SPA or Woolmer Forest SAC if there will be a significant increase in vehicle movements (i.e. an increase of over 200 Heavy Duty Vehicles per day) on the A3 within 200m of those European sites. Such a large increase is considered unlikely.'</i> The West Sussex Minerals Local Plan: Transport Assessment (2015) has since identified that there would be 80 two-way daily AADT movements and therefore a significant increase is unlikely.</p> <p>Furthermore in relation to water quality, it was noted that <i>'any increase in sediment that might arise from dewatering associated with this minerals site would be subject to such a scale of dilution that its effect on the SPA/Ramsar site would be negligible, particularly since the main channel of the River Arun does not form part of the SPA/Ramsar site. Moreover, it is assumed that sediment loading in watercourses near the site will be controlled by conditions since it is an offence to pollute surface watercourses irrespective of whether they</i></p> <p>As a result, it was concluded that there are adequate safeguards in place to ensure that the proposed minerals site will not have adverse effects on the integrity of the international sites listed above.</p> <p>While adverse effects on the integrity of international sites have been ruled out, minor negative effects on this objective are likely due to the sites proximity to West Heath Common SNCI, River Rother SNCI, Brick Kiln Copse, Pondtail Plantation, Millhanger Copse, Harting Pond and Stream SNCI. However, these</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>Therefore, a minor negative effect is considered likely in relation to biodiversity.</p> <p>The site could have minor negative effects on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>This site is not within 500m of any national site of geological interest (SSSI) or Local Geological Site.</p> <p>Therefore, it considered that this site is unlikely to have an effect on this objective.</p> <p>The site is considered unlikely to have an effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>There are two Scheduled Monuments within close proximity to the site. The closest being the Medieval moated site in Parlour Copse 60m south of the site and the two bowl barrows (part of West Heath Common round barrow cemetery) 341m north west. Champs Grade II Listed Building is 935m to the south, while to the east Sandhill House is 755m away and Sandhill Farmhouse is 855m away.</p> <p>The WSCC/SDNPA site assessment study notes that Parlour Copse directly to the south (within 60 metres) of the site boundary could also be compromised.</p> <p>The WSCC/SDNPA site assessment notes that <i>'worked flint of mesolithic date has been recovered during trial pit excavation in the 1980s'</i>. The site assessment also notes that <i>'within the western part of the site are the sites of two former barrows (tumuli), and part of a third, part of the West Heath Bronze Age barrow cemetery. The barrow mounds themselves were fully recorded by archaeological excavation in the 1970s and 1980s, and have been removed; but between and around the barrows there may be presently unknown archaeological features associated with the mounds (e.g. Prehistoric fence lines, cremation burials). In the extreme north-west corner of the site there may be</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>present early prehistoric river terrace sands/ gravels, which may contain Early Palaeolithic flint tools, and contain microfossils relevant to understanding of ancient environment. Parlour Copse directly to the south (within 60 metres) of the site boundary could also be compromised.' i</p> <p>The WSCC/SDNPA site assessment also states that appropriate assessments (e.g., Scheduled Monument visual impact assessment) surveys and reports (e.g. archaeological desk-based assessments and non-invasive and invasive field evaluation) will be required to be carried out and submitted with any planning application.</p> <p>Overall, this site is considered to have a minor negative effect on these assets. These effects would be uncertain as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is small to medium (16 ha). Most of this site is located on grade 4 agricultural land, aside from the northern area of the site which is on grade 3 agricultural land. Therefore, development at this site could have a minor negative effect on protecting or enhancing soil/land quality.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>The site is not within 1km of an AQMA. The WSCC/SDNPA site assessment states that although this site is not located within an AQMA, 'off site traffic movements will need to be considered in the Transport Assessment. If traffic would have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required'.</p> <p>In relation to international conservation sites, the HRA Report noted that 'Assuming quarry traffic uses the A3 via A272, there is potential for an impact pathway via traffic emissions to the Wealden Heaths Phase II SPA so this site</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p><i>has been screened in for further consideration. Furthermore this site contains and is adjacent to a watercourse that drains to the River Rother and ultimately into the Arun Valley SPA/Ramsar. There is therefore a potential pathway for sediment to impact this European site'.</i></p> <p>With reference to air quality, the report concluded that '<i>based on current information there is no reason to conclude that this proposed minerals site will have adverse effects on air quality at any European designated sites but transport assessments undertaken for this site should take into account any impacts on Wealden Heaths Phase 2 SPA or Woolmer Forest SAC if there will be a significant increase in vehicle movements (i.e. an increase of over 200 Heavy Duty Vehicles per day) on the A3 within 200m of those European sites.</i>' The West Sussex Minerals Local Plan: Transport Assessment (2015) identified that there would be 80 two- way daily AADT movements and therefore a significant increase is unlikely.</p> <p>Therefore, this site is likely to have a negligible impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a negligible effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	-?	R -?	<p>The site is not located within SPZ1, however Harting Stream flows within the southern area of the site and along its southern boundary. However, the HRA concluded that there are adequate safeguards in place to ensure that the proposed minerals sites will not have adverse effects on the Wealden Heaths Phase II SPA or Arun Valley SPA/Ramsar.</p> <p>The WSCC/SDNPA site assessment study notes that the site is located on a major aquifer and could have negative impacts in the absence of a high level of</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>mitigation. The site assessment also notes that therefore the depth of working and de-watering operations will need to be explored and assessed, and that avoiding below groundwater level working is preferable. Furthermore, a Phase 1 qualitative hydrological and hydrogeological risk assessment would be required prior to allocation, and hydrological impacts, especially in relation to the important wet heath habitat to the west, which would need to be assessed.</p> <p>Therefore, a minor negative effect is considered likely for this objective. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>This site could have a minor negative effect on regulating ecosystem services is expected.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) this site is identified as having no effect (green) on most of the flooding sources, with the exception to fluvial flooding where a (amber) moderate risk was identified for part of the site (25%) being within FZ2/3.</p> <p>Therefore, development is considered likely to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-	0/R -	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'high' acceptability rating and would therefore have a negligible effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>However, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>. Overall, a mixed negligible /minor negative effect is likely for this objective.</p> <p>The site could have a mixed negligible /minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	-	R -	<p>All sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>

Minsted West M/CH/8A

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There are residential properties to the east of the site along Minsted Road and at Quag's Corner, some of which are within 100m of the site. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>This site is located within the South Downs National Park. The South Downs National Park Plan is currently at Preferred Options Consultation stage, which closed on 28th October 2015. However, it is unlikely that there will be any land use conflicts with this proposed site.</p> <p>There are no allocated waste sites in the West Sussex Waste Local Plan within 1km of the site. However, this site is approximately 1km south of Stedham village and within 200m of Minsted to the east. The site is adjacent to the existing Minsted Sandpit site (which this site will form an extension to) and therefore continued working of this site could result in cumulative effects on the amenity of the local communities. Also, the proposed mineral site, Severals West, is within 1km of the site and if both sites were to come forward, they could result in cumulative effects on local communities.</p>
2. To protect and, where	-	C -	The site is located within the South Downs National Park.

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).			<p>Bridleway Footpath no. 907 runs between the northern boundary of the proposed site and the southern boundary of the existing quarry joining bridleway no. 909/4 to the northeast of the site. Public Footpath no.910 is located 165m to the east of the site, and Footpath no. 903 is located 225m to the southeast. There is also an area of common land immediately adjacent to the south western edge of the site.</p> <p>Therefore, this proposed site could have a minor negative effect on the amenity of users of PROW and other users of the countryside in the County, or enjoyment of the National Park by making the facilities/countryside less attractive for users and impacting on amenity.</p> <p>The WSCC/SDNPA site assessment study also states that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>' The WSCC/SDNPA site assessment also states that '<i>existing PROW recorded immediately adjacent to any site are to remain accommodated on their legal line and are not to be disturbed, obstructed or public access deterred. Where it is proposed that material is to be extracted or deposited adjacent to these paths, such works are not to be undertaken within 20 metres of the PROW in order that there will be no future subsidence or slippage to cause the PROW to fall away, or spread of material to cause deposition on the PROW.</i>' The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	<p>All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	--	C --	<p>This site is within the South Downs National Park.</p> <p>The 2015 SDNPA Supplement to the 2011 Landscape Capacity and Sensitivity Study assessed this site as having an overall landscape sensitivity of 'medium-high'.</p> <p>The 2011 Landscape Capacity and Sensitivity Study assessment study states that '<i>Data indicates that the site is within an area of medium tranquillity. The south of the site is within an area defined as 'undisturbed' and the north of the site is in an area defined as 'disturbed by noise'.</i></p> <p>The 2015 SDNPA Supplement states that '<i>the Extension could be accommodated with further screening planting and re-routing of the PRoW which crosses to the south of the existing site. Restoration proposals would be key to this site and should be contiguous with that of the existing site.</i>'</p> <p>Therefore, development at this site could be more likely to have a significant negative effect on designated landscapes, local landscape character and/or tranquillity.</p> <p>The site could have a significant negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including	--?	P --	There are several local designations within 1km of this site. Iping Common

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
natural habitats and protected species.		<p>R --</p> <p>C --</p>	<p>(LNR/ SSSI) is approximately 470m to the north of this proposed site. In addition the WSCC/SDNPA site assessment study notes that Henfield Wood SNCI (SNCI C123) lies approximately 200m to the west of this site and Stedham Common SNCI is approximately 500m to northeast, and Severals Bog (SNCI C105) is approximately 600m to the east.</p> <p>In relation to international sites, Singleton and Cocking Tunnel SAC/ SSSI is approximately 4.2km south of the site, while Rook Clift SAC/SSSI is 3.7km south west of the site. This site has therefore been 'screened in' for Appropriate Assessment as part of the Habitat Regulation Assessment 2015. In the HRA report, it is noted that <i>'the proposed extension to an existing minerals site is approximately 200m from a stream that flows 2-3km into the River Rother. The Rother at this point is 15-20km from the Arun Valley SPA/Ramsar site (the Rother feeds into the River Arun). As such, any increase in sediment that might arise from dewatering associated with this minerals site would be subject to such a scale of dilution that its effect on the SPA/Ramsar site would be negligible, particularly since the main channel of the River Arun does not form part of the SPA/Ramsar site. Moreover, it is assumed that sediment loading in watercourses near the site will be controlled by conditions since it is an offence to pollute surface watercourses irrespective of whether they drain to a European site or not. It can therefore be concluded that there are adequate safeguards in place to ensure that minerals site CH/8A will not adverse effects on the Arun Valley SPA/Ramsar through reduced water quality.'</i></p> <p>While adverse effects on the integrity of international sites have been ruled out, significant negative effects on this objective are likely due to the sites proximity Henfield Wood SNCI. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>Therefore, a significant negative effect is considered likely for this objective.</p> <p>The site could have a significant negative effect on provisioning, regulatory and cultural ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
7. To protect and conserve geodiversity.	0	C 0	<p>There is no national site of geological interest (SSSI) or Local Geological Site within 500m of this proposed site, therefore it is considered unlikely to affect this objective.</p> <p>The site is likely to have negligible effects on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>There are several cultural heritage assets within 1km of this site. To the east and north eastern areas, there are five listed buildings within the settlement of Minsted. The nearest of these is Minsted House Cottage 270m away. Stedham with Iping CP Historic Parkway which includes a Listed Building is 245m away to the west, while in the northwest there are several Scheduled Monuments ,the nearest of these is Bowl barrow on Fitzhall Rough (part of Fitzhall Rough round barrow cemetery), which is 185m away.</p> <p>The WSCC/SDNPA site assessment study also notes that '<i>this is a large site on the Lower Greensand, a formation where earlier prehistoric occupation (e.g. Mesolithic flint scatters) is a common occurrence. On a large site such as this, the possibility that Mesolithic or other remains of ancient occupation may be present should be taken into account, e.g. The sites of former barrows (tumuli).</i>'</p> <p>The WSCC/SDNPA site assessment also states that development would be acceptable provided that impacts upon any buried archaeological remains can be satisfactorily are mitigated. It is recommended that an archaeological impact assessment (archaeological desk-based assessment and non-invasive and invasive field evaluation), surveys and reports are carried out and submitted with any planning application.</p> <p>Therefore, this site is considered to 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.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is small to medium (9.96 ha). Half of the site is on grade 2 agricultural land, while the other half is on grade 3a agricultural land quality. Therefore, development at this site could have a minor negative effect on protecting or enhancing soil/land quality.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -	<p>Access to and from the site is likely to use the existing site access from Minsted Road. From there, there is access to the A272 (Petersfield Road), which is classed as part of the West Sussex Lorry Route Network, approximately 890m north of this site. The WSCC/SDNPA site assessment notes that in a high level transport assessment (2011) it was noted that that there would be no intensification of traffic and that it is <i>considered that a further extension would be acceptable</i>. The study recommended that if allocated, this site and other potential soft sand sites in the area are sequentially developed.</p> <p>This site is not located within an Air Quality Management Area, however, the WSCC/SDNPA site assessment study highlighted the traffic from this site may pass through the AQMA's in Chichester at the A27/A286 Stockbridge roundabout and A286- Orchard St and A285- St Pancras. If traffic were to have a negative impact on these AQMAs, then an Air Quality Assessment would also be required.</p> <p>In relation to international conservation sites (SAC/SPA and Ramsar sites), there is potential for traffic to pass within 200m of Singleton and Cocking Tunnel SAC/SSSI which is approximately 4.2km south of the site on the A286 (Cockhill Road). However, the HRA states that '<i>It has been confirmed that there is not expected to be any change in traffic flows as a result of the operation of this extension because it will be operated sequentially to the existing works rather than cumulatively.</i>' Furthermore, the West Sussex Minerals Local Plan: Transport Assessment (2015) identified that there would only be 80 two- way daily AADT movements.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	-?	R -?	<p>The site is not located within SPZ1. The WSCC/SDNPA site assessment study notes that the site is located on a major aquifer. Furthermore the site assessment highlights that this is a proposed extension to the existing site at Minsted, and there are current concerns that operators at Minsted not satisfying the planning conditions and there are potential hydrological impacts on Iping Common SSSI. The Environment Agency, has therefore recommended <i>'that until the condition is met and any risks are understood and mitigated further extension to this site should be refused.'</i></p> <p>In relation to nature conservation, the potential for impacts on the Arun Valley SPA/Ramsar through reduced water quality as a result of sediment deposition was assessed in the HRA report. This concluded <i>'that there are adequate safeguards in place to ensure that the proposed minerals sites will not have adverse effects on water quality at any European designated sites'</i>. It also concluded with reference to the <i>'Singleton and Cocking Tunnels SAC, 'there is no scope for adverse impacts on this European site.'</i></p> <p>Therefore a minor negative effect is considered likely for this objective due to the potential effects on Iping Common SSSI. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>This site is within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) this site is identified as having no effect (green) on most of the flooding sources, with the exception to surface water where a small part of the site (5%) was found to be at higher risk of surface water flooding. A medium risk of flooding (amber) was also identified for sewers and artificial sources as a result of the sites proximity to the pond at Stedham Common Sand Pit. It is noted that no information is available about the proportion of the site at risk of flooding from this source.</p> <p>Therefore, development is considered likely to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-	R 0/-	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'high' acceptability rating, subject to no material increase in traffic onto Minsted Lane and an appropriate transport assessment detailing the impact, including cumulative assessment and mitigation measures if needed. Therefore, this site is expected to have a negligible effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>However, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a mixed negligible /minor negative effect is likely for this objective.</p> <p>The site could have a mixed negligible /minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of	-	R -	<p>All sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
greenhouse gases.			<p>lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>

Severals West M/CH/8D

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>The site is within 100m of sensitive receptors including Severals House located to the east of the site along Severals Road and residential properties to the south and west of the site. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>This site is located within the South Downs National Park. The South Downs National Park Plan is currently at Preferred Options Consultation stage, which closed on 28th October 2015. However, it is unlikely that there will be any land use conflicts with this proposed site.</p> <p>The site is within 1km of three settlements, as it is located approximately 680m to the east of Midhurst, within 500m of the southern limits of Stedham and within 400m of Minsted. There are no allocated waste sites in the West Sussex Waste Local Plan within 1km of the site. However, there are two existing mineral and waste sites within 1km of the site and the surrounding settlements. Midhurst Household Waste Recycling Site is 870m east of this site and Minsted Sandpit is 805m to the west. Also, the proposed extension site for Minsted Sandpit, Minsted West, is within 1km of the site and if both sites were to come forward, they could result in cumulative effects on local communities. Therefore, this site could have a cumulative effect on the local community.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	--	C --	<p>The site is located within the South Downs National Park and includes the Serpent Trail which runs through the site and is part of a long distance trail.</p> <p>Footpath no. 3619 loosely follows the southern and western boundaries of the site. In addition, Footpath no.1127 is located adjacent to the site to the north and this connects the site to Woolmer Corse to the north of the A272 (Petersfield Road). Footpath no. 911 is located 40m to the south, while Footpath no's. 3617 and 3618 are located to the east of Severals Road along with other footpaths within the area of common land 30m away (e.g. Midhurst Common). There are also several other footpaths within the area of common land 10m to the north.</p> <p>The WSCC site assessment study also notes that '<i>Severals West is likely to have significant impacts on access and PROW.</i>' However, '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>Therefore, this proposed site could have a significant negative effect on the amenity of users of PROW and other users of the countryside in the County, or on enjoyment of the National Park by making the facilities / countryside less attractive for users and impacting on amenity.</p> <p>The site could have significant negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	<p>All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	--	C --	<p>This site is within the South Downs National Park.</p> <p>The 2015 SDNPA Supplement to the 2011 Landscape Capacity and Sensitivity Study assessed this site as having an overall landscape sensitivity of 'medium to high'. The 2011 study stated that the sloping northern fringe and areas of ancient woodland were of higher sensitivity, and that majority of the site is in an area of medium tranquillity, although there is an area in the south of the site with higher tranquillity. The site is within an area defined as 'disturbed by noise'.</p> <p>The 2015 SDNPA Supplement states that <i>'the existing use of the land for forestry plantation reduces its overall sensitivity on landscape grounds and to some extent how tranquillity is measured as the woodland is not perceived to be 'natural'. For this reason it has been considered that restoration proposals to heathland/woodland mosaic would be beneficial in the long term provided that sufficient areas of the sites can be restored to land rather than wet restoration with the associated water quality issues that this involves'</i>.</p> <p>Therefore, development at this site could be more likely to have a significant negative effect on designated landscapes, local landscape character and/or tranquillity.</p> <p>The site could have a significant negative effect on cultural ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --</p> <p>R --</p> <p>C --</p>	<p>There are several local designations within 1km of this site. Iping Common (LNR/ SSSI) is approximately 345m to the west of this proposed site. There is also an area of replanted Ancient Woodland located within the north/northwest of the site. In addition, the WSCC/SDNPA site assessment study notes that <i>'Severals Bog SNCI (SNCI C105) is situated within the site along the western edge. Even with a buffer strip, the bog habitat could be vulnerable to local changes in hydrology as a result of mineral working. Quaggs Corner SNCI (SNCI C53) lies to the west of this site.'</i></p> <p>In relation to international sites, Singleton and Cocking Tunnel SAC/ SSSI is approximately 3.7km south of the site. Rook Clift SAC/SSSI is also 4.8km southwest of the site. This site has therefore been 'screened in' for Appropriate Assessment as part of the Habitat Regulation Assessment 2015. In the HRA report, it is stated that <i>'the proposed minerals sites include a stream that flows 500m into the River Rother. However, the Rother at this point is 15-20km from the Arun Valley SPA/Ramsar site (the Rother feeds into the Arun before this point). It should be noted that the main channel of the River Arun does not form part of the SPA/Ramsar. As such any increase in sediment that might arise from dewatering associated with this minerals site would be subject to such a scale of dilution that its effect on the SPA/Ramsar site would be negligible, particularly since the main channel of the River Arun does not form part of the SPA/Ramsar site. Moreover, it is assumed that sediment loading in watercourses near the site will be controlled by conditions since it is an offence to pollute surface watercourses irrespective of whether they drain to a European site or not.'</i> Therefore, it was concluded that <i>'this site will not have any likely significant effects on the Arun Valley SPA/Ramsar through reduced water flows or quality'</i>.</p> <p>While significant effects on the integrity of the SAC/SPA/Ramsar sites have been ruled out, a significant negative effect on this objective is likely due to Ancient Woodland and Severals Bog SNCI being located within the site. However, these effects would be uncertain as the potential for effects will depend on the exact</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>nature and design of new sites.</p> <p>Therefore, a significant negative effect is considered likely for this objective.</p> <p>The site could have a significant negative effect on provisioning, regulatory and cultural ecosystems</p>
7. To protect and conserve geodiversity.	0	C 0	<p>There is no national site of geological interest (SSSI) or Local Geological Site within 500m of this proposed site, therefore it is considered unlikely to affect this objective.</p> <p>The site is likely to have negligible effects on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>There are several cultural heritage assets within 1km of this site. To the west and southwest, there are five Grade II listed buildings within/in close proximity to Minsted. The nearest of these is located in Quags Corner 190m away while the farthest is Minsted House Cottage, which is 665m away. To the south there are four Grade II listed buildings, the closest being Heathlands Farmhouse and Barn both of which are 485m away and the farthest is Lane End Cottage, which is 970m away. To the east, Guillard's Oak Historic Parkscape is approximately 1km away, Heathbarn Farmhouse is 390m away and The Half Moon Inn is 900m away. To the north of the A272 (Petersfield Road), there are two Conservation Areas containing Listed Buildings, including Stedham Conservation Area which is 440m away and Woolbeding Conservation Area which is 945m away and from the proposed site. In addition, Woolbeding House Historic Parkscape 730m away from the proposed site.</p> <p>The WSCC/SDNPA site assessment study recommends that an early archaeological assessment is undertaken, and as a preliminary to any field evaluation a Lidar survey should be carried out, as this is a wooded site. Evaluation should be undertaken pre-determination and the results made available to consider at the application stage. Therefore, this site is considered to 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</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>of the minerals site, which would not be known until the planning application stage.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This is a large site (54.95) and is mainly on non-agricultural land, however a small area in the north is located on land classified as grade 2 agricultural land, and a small area in the extreme south west is located on grade 3 agricultural land. Therefore, development at this site could have a minor effect on protecting or enhancing soil/land quality.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -	<p>This site is not located within 1km of an Air Quality Management Area, however, the WSCC/SDNPA site assessment study highlights that traffic from this site may travel through the 'AQMA's in Chichester at the A27/A286 Stockbridge roundabout and A286- Orchard St and A285- St Pancras.' The WSCC/SDNPA site assessment recommends that if traffic would have a negative impact on the AQMA's, then an Air Quality Assessment would also be required. In relation to international designated conservation sites (SAC/SPA and Ramsar sites), there is potential for traffic to pass within 200m of Singleton and Cocking Tunnel SAC/SSSI on the A286 (Cockhill Road). However, the HRA report states that '<i>there is no scope for adverse impacts on this European site.</i>'</p> <p>The West Sussex Minerals Local Plan: Transport Assessment (2015) identified that there would be 96 two-way daily AADT movements.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			The site could have a minor negative effect on the regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	-?	R -?	<p>The site is not located within SPZ1 although the western boundary of the site is adjacent to a river that drains in the central and lower southern areas of the site. The WSCC/SDNPA site assessment also notes that the groundwater levels are likely to be high, and that the depth of working and de-watering operations will need to be explored and assessed. There is also a preference to not-working below the groundwater table.</p> <p>In the Habitat Regulation Assessment 2015 report, it was concluded that <i>'sediment loading in watercourses near the site will be controlled by conditions since it is an offence to pollute surface watercourses irrespective of whether they drain to a European site or not. It can therefore be concluded that this site will not have any likely significant effects on the Arun Valley SPA/Ramsar through reduced water flows or quality.'</i></p> <p>Therefore a minor negative effect is considered likely for this objective. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>A minor negative effect on the regulating ecosystem services is expected.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>Most of this site is within Flood Zone 1, although small areas of the western side of the site are within Flood Zones 2 and 3. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) this site is identified as having no effect (green) on most of the flooding sources, with the exception to surface water where a low risk (yellow) was found owing to a higher risk of flooding on an area of less than 5%, and 25% of the site (amber) is also identified as being at higher risk from groundwater.</p> <p>Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	--	R --	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'low/medium' acceptability rating, '<i>subject to further detailed technical investigations relating to the feasibility (design and costs) of constructing an access road to connect the site with the A272</i>'. Therefore, development is considered likely to have significant negative effects on reducing the impacts of lorry traffic on the environment and communities.</p> <p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, the site could have a significant negative effect on regulating ecosystem services.</p> <p>The site could have a significant negative effect on the regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
14. To reduce the emissions of greenhouse gases.	-	R -	<p>All sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock site thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>

Horncroft M/CH/11

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>Lyon Cottage bed and breakfast along with six residential properties are within 100m to the east on Tripp Hill. The WSCC/SDNPA site assessment states that Horncroft Farm is located approximately 200m northeast of the site, and a further 26 houses are located approximately 500m from the site and there are further residential properties also located to the south of the site. Also, the settlements of Watersfield and Coldwaltham are approximately 950m east of the site. Therefore, development at this site is considered to 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, and minor negative effects on amenity. Although, this 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), and 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. Therefore, in all cases these effects are minor negative uncertain.</p> <p>This site is located within the South Downs National Park. The South Downs National Park Plan is currently at Preferred Options Consultation stage, which closed on 28th October 2015. However, it is unlikely that there will be any land use conflicts with this proposed site.</p> <p>There are no existing or allocated waste sites or existing mineral sites within 1km of the site. Therefore, neighbouring settlements are unlikely to experience cumulative effects on amenity.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside,	-	C -	<p>The site is located within the South Downs National Park.</p> <p>The WSCC/SDNPA site assessment also notes that '<i>The Serpent Trail and a number of bridleways pass close to the north and west of the site.</i>' This includes Public Bridleway no.762 is located approximately 80m north of the site and</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
open spaces and Public Rights of Way (PROW).			<p>Restricted Byway 3258 and Bridleway 706 is located 200m north west of the site. In addition there are a number of commons and parks surrounding the site including Coates Common which adjacent to the northern area of the site and Sutton Common 220m west. Coldwatheram Park Wood is also located 60m to the east. The site assessment also states that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>Therefore, this proposed site could have could have a minor negative effect on the amenity of users of PROW and other users of the countryside in the County, or on enjoyment of the National Park by making the facilities / countryside less attractive for users and impacting on amenity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	<p>All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	--	C --	<p>This site is within the South Downs National Park.</p> <p>The 2015 SDNPA Supplement to the 2011 Landscape Capacity and Sensitivity Study assessed this site as having an overall landscape sensitivity of 'medium to high sensitivity to the west of the site and 'high' sensitivity along the eastern side. The 2011 Study states that '<i>data indicates that the site is within an area of medium tranquillity, although there is an area of higher tranquillity in the northeast of the site. The site is within an area defined as 'undisturbed by noise'.</i></p> <p>The 2015 SDNPA Supplement states that '<i>Horncroft is more complex as the high assessment for this site is largely as a result of the access requirements for the site and the existing topography of the site which could expose working to the wider landscape without careful phasing of the works. The proposed working area has been reduced to a degree which significantly minimises the potential impacts on the surrounding highly sensitive landscape and it is considered that there is potential to overcome the remaining issues excepting the proposed access which is considered to have significant impacts on the SDNP.</i>'</p> <p>Therefore, development at this site could be more likely to have a significant negative effect on designated landscapes, local landscape character and/or tranquillity.</p> <p>The site could have a significant negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	P --? R --? C --?	<p>There are several local designations within 1km of this site. In terms of local and national designations, there are three SSSI sites located to the west/southwest of this site (all known as Coates Castle). The closest fragment of this site is 480m away and the farthest 1km away. The WSCC/SDNPA site assessment notes that '<i>Lord's Piece, Sutton Common Local Wildlife Site is located approximately 220m west of the site</i>' and that '<i>Coates Sand Pit SNCI is located approximately 290m northwest of the site.</i>' The WSCC/SDNPA site</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>assessment also states that <i>'there are a number of Ancient Woodland areas in close proximity to the site; the closest is to the east (less than 100m from the southeast corner).'</i>' The Study also identifies the presence of BAP habitat and woodland on the site and notes that <i>'Sussex Biodiversity Records Centre states that there are over 59 rare and endangered species of flora and fauna within 1km radius from the site.'</i></p> <p>In terms of international sites, this site lies approximately 2.5km from Arun Valley SPA/Ramsar or 7km from via water courses. Duncton to Bignor Escarpment SAC is 3km south of the site and the Mens SAC is 4.9km north. This site has been 'screened in' for Appropriate Assessment as part of a Habitat Regulation Assessment 2015. The HRA identified the presence of Barbastelle bats in the Mens SAC. In the assessment the report noted that <i>'The Greenaway (2008) report identifies that no bat flight lines in the study were located south of the A283. As such, it is considered that as the Horncroft minerals site is located approximately 2.2km south of the A283, it is not utilised by the barbastelle bat features of The Mens SAC and will not have a likely significant effect upon The Mens SAC.'</i></p> <p>As a watercourse runs through the site and drains into the River Rother and into Arun Valley SPA/Ramsar, there is a potential pathway for sediment to impact this European site. In the HRA study, it is noted that <i>'any increase in sediment that might arise from dewatering associated with this minerals site would be subject to such a scale of dilution that its effect on the SPA/Ramsar site would be negligible, particularly since the main channel of the River Arun does not form part of the SPA/Ramsar site. Moreover, it is assumed that sediment loading in watercourses near the site will be controlled by conditions since it is an offence to pollute surface watercourses irrespective of whether they drain to a European site or not. It can therefore be concluded that adequate measures are in place to ensure that minerals site CH/11 will not have an adverse effect on the Arun Valley SPA/Ramsar through reduced water quality'</i> While adverse effects on the integrity of the SAC/SPA/Ramsar sites have been ruled out, a significant negative effect on this objective is likely due to the proximity of</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>ancient woodland, Coates Castle SSSI sites, Sutton Common Local Wildlife Site, Coates Sand Pit SNCI and the presence of a BAP habitat and woodland on the site. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>Therefore, a significant negative effect is considered likely for this objective.</p> <p>The site could have a significant negative effect on provisioning, regulatory and cultural ecosystems</p>
7. To protect and conserve geodiversity.	0	C 0	<p>There are no national sites of geological interest (SSSI) or Local Geological Site within 500m of this proposed site, therefore it is considered unlikely to affect this objective.</p> <p>The site is likely to have negligible effects on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>There are several cultural heritage assets within 1km of this site. To the north, there are several Listed Buildings within Coates Conservation Area, which is 615m away and Coates Castle Historic Parkscape 620m away. Also to the north are three Grade II Listed buildings including Horncroft Farmhouse (235m), Tripphill (580m) and Kate's Cottage and Tripp Hill Cottage (700m).</p> <p>To the north and northwest there are four Scheduled Monuments, which form part of the Bowl barrow on Sutton Common; the closest being 370m away and the furthest being 635m away.</p> <p>To the south west Bignor CP Historic Park and Garden and Historic Parkscape is 450m away, and Flint Cottage Grade II Listed Building. To the east, there is Watersfield Conservation Area 1km away, which includes listed buildings and Satchers Grade II Listed Building.</p> <p>115m to the southeast is Satchers Grade II Listed Building and there are several Grade II Listed buildings within Watersfield Conservation Area 1km away.</p> <p>The WSCC/SDNPA site assessment states that provisional findings from a 2008</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>archaeological desk-based assessment and walkover survey have revealed 'only a few surviving ancient archaeological features, principally Roman remains within the proposed access road area.' The study recommends that development is acceptable subject to further investigations including a Lidar survey and 'archaeological investigation, recording, and mitigation, particularly in the wooded part of the site, where more evaluation is required'.</p> <p>Therefore, this site is considered to 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.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is large (23.91 ha) and is located on grade 3 agricultural land.; Therefore, this site could have a minor negative effect on protecting or enhancing soil/ land quality.</p> <p>This site is could have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -	<p>The site is not within 1km of an AQMA. However, the WSCC/SDNPA site assessment study states that 'traffic from this site may pass through the AQMA at the A283 High Street/Manley's Hill, Storrington and the AQMA's in Chichester (A27/A286 Stockbridge roundabout, A286- Orchard St and A285- St Pancras)' and that 'if traffic were to have a negative impact on an Air Quality Management Area, then an Air Quality Assessment would also be required.' The site assessment also states that a high level transport assessment (2011) supported the allocation of this site, subject to new access being made onto the B2138 being provided and a detailed routing agreement that considers and proposes adequate mitigation against HGV traffic arriving at the site.</p> <p>The West Sussex Minerals Local Plan: Transport Assessment (2015) identified that there would be 144 two-way daily AADT movements at the site.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>In terms of international sites, this site has been 'screened in' for Appropriate Assessment as part of a Habitat Regulation Assessment 2015 and it was concluded that there would be no likely significant effects upon international sites.</p> <p>Therefore, this site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	-?	R -?	<p>The site is not located within SPZ1. However, there is a surface water stream which runs along the western and southern boundary. The WSCC/SDNPA site assessment study notes that '<i>the stream which is an important tributary of the River Rother, is known to be important for Sea Trout.</i>' This watercourse drains into the River Rother and into Arun Valley SPA/Ramsar. However, the Habitats Regulations Assessment 2015 concluded that this site will not have an adverse effect on the Arun Valley SPA/Ramsar through reduced water quality.</p> <p>The WSCC/SDNPA site assessment also states that the site is located to the east of Source Protection Zone (Zone 3), which '<i>must be protected to the satisfaction of the Environment Agency</i>'.</p> <p>Therefore, a minor negative effect is considered likely for this objective. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>This site is within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) this site was identified as having no effect (green) on most of the flooding sources, with the exception to ground water where a small part of the site (10%) (yellow) was identified to be at higher risk.</p> <p>Therefore, development is considered to have a negligible effect on flood risk areas and unlikely to increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site is likely to have a negligible effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-	R 0/-	<p>.The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'High' acceptability rating, subject to a '<i>revised Transport Assessment detailing any mitigation measures</i>' and therefore the site will have a negligible effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>However, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a mixed negligible /minor negative effect is likely for this objective.</p> <p>The site could have a mixed negligible /minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	-	R -	<p>All sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock site thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery. The</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			site could have a minor negative effect on the regulating ecosystem services.

Chantry Lane Extension M/HO/2

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>This site is within 100m of the south eastern corner of the settlement Storrington. Therefore, development at this 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 County, and minor negative effects on amenity. However, this 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). It is also dependent on the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would all be assessed at the planning application stage. 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. Therefore, these effects are minor negative uncertain.</p> <p>This site is located within the South Downs National Park. The South Downs National Park Plan is currently at Options Consultation stage of producing their Park Plan. The site (which is a proposed extension site) is adjacent to the existing quarry, which has been identified in the Storrington, Sullington & Washington Neighbourhood Plan 2015-2031 for tourism or other community related development (see policy 8: Tourism Development Chantry Quarry). If this development is brought forward, then the use of the extension site for mineral extraction is likely to have a minor negative effect upon the health of residents and the local amenity, due to potential dust. However, it is assumed that mineral extraction at any of the potential sites will incorporate dust avoidance measures. Therefore, these effects are minor negative uncertain</p> <p>According to the West Sussex Waste Local Plan, there are no allocated waste sites within 1km of this site, but there are three existing mineral sites within 1km of the proposed site. The closest being adjacent to the north of the site at Chantry Lane Quarry (which this site will form an extension to), while Sandgate</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Park Quarry is 645m to the northeast, and Hampers Lane Sandpit is approximately 990m east of the proposed site. Therefore, the site could have a potential cumulative effect on the amenity of the local community.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	C -	<p>Public Footpath No. 2664 is approximately 120m southwest along the boundary of the existing quarry. Public Footpath No. 2631 is also approximately 230m north of the proposed site. In addition, there is common land approximately 245m north of the site. The site is also located within the South Downs National Park. Therefore, development at this site could lead to minor negative effects on recreation activities and assets in the County or enjoyment of the National Park by making the facilities/ countryside less attractive for users. However, the site is adjacent to an existing site, therefore effects are likely to be minimal as effects may already be existing.</p> <p>The WSCC/SDNPA site assessment notes that opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates	+	S -	New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
and other minerals sufficient for the needs of society.			<p>degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>The 2015 SDNPA Supplement to the 2011 Landscape Capacity and Sensitivity Study assessed this site as having an overall landscape sensitivity of 'medium sensitivity', with the mature perimeter trees being features of higher sensitivity. This site was assessed as having a 'moderate' landscape capacity.</p> <p>According to the study, <i>'the restricted views into the area will enable the visual containment of extraction activities within existing tree cover. The entrance to the site would result in visual intrusion and create a cumulative effect with that of the sand site opposite (Sandgate Park). The small to medium scale of the arable farmland and the structure of trees around the perimeter, which link in with tree belts and woodland in the wider area, reduce the capacity of the site to accommodate development without eroding the pattern and structure of the farmland. However, the landscape of the immediate area is clearly „worked“, with a limited sense of tranquillity due to the proximity of the fringes of Storrington. Extending the existing workings may give rise to cumulative impacts, with the potential for increasing the intrusiveness of the existing pit, particularly in relation to views from the south and east towards Storrington. It is overlooked by higher ground to the south, with some potential visibility from the wider area to the east and south, and adequate screening of views, particularly from the upper slopes of the scarp and Downs, may not be achieved by retaining and enhancing trees and vegetation around the perimeter.'</i></p> <p>Furthermore <i>'there is potential for the landscape features and habitat value of the area to be enhanced and improved upon in conjunction with the development of the site'.</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Therefore the site is considered likely to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --?</p> <p>R --?</p> <p>C --?</p>	<p>The Sullington Warren SSSI is located approximately 245m to the north of the site. Arun Valley SPA/Ramsar also lies approximately 5km west of this site. This site has therefore been 'screened in' for Appropriate Assessment as part of the Habitat Regulation Assessment 2015, but an adverse effect on integrity of the SPA/Ramsar site was able to be ruled out. The HRA report concludes that <i>'The River Stour flows adjacent to this site into the Arun Valley SPA/Ramsar some 5-6km distant. On route, the River passes the settlement of Storrington and two treatment works. Input of water from the River Stour onto the SPA/Ramsar is only permitted through opening of sluice gates in very dry conditions as an 'emergency measure,' as the water quality within the River Stour is already poor. It is therefore clear that flows from the River Stour are not essential for the continued maintenance of the integrity of the SPA/Ramsar site. It was therefore concluded that minerals site HO/2 will not have an adverse effect on the Arun Valley SPA/Ramsar through reduced water flows or quality.'</i></p> <p>While adverse effects on the integrity of the SPA/Ramsar site have been ruled out, significant negative effects on this objective are likely due to the Sullington Warren SSSI being within 250m of the site, however these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>The site could have a significant negative effect on the provisioning, regulating and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	-?	C -?	<p>A small area of the northern boundary of the proposed site falls adjacent to Chantry Mill SSSI, and Local Geological Site. According to Natural England this site is designated because it <i>'provides the best available exposure of the unusual 'iron-grit' horizon which characterises the Gault/Folkestone Beds junction in this part of Sussex and which contrasts strongly with the type of transition seen</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p><i>between these formations elsewhere in south-east England. The 'iron-grit' represents a condensed deposit associated with prolonged nondeposition over a structural axis, (probably the northern margin of the major Portsdown Axis), which separated the Vectian and Wealden provinces in the Lower Cretaceous'</i></p> <p>A minor negative effect is considered likely on this objective, however these effects would be dependent on the exact nature, working and proposed design of the restoration of the minerals, which would not be known until the planning application stage.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>This site is within 1km of several historic assets including Sandgate Park Historic Park which is 225m to the east of the site, Sullington Conservation Area which includes listed buildings is 540m to the south, and Storrington Conservation Area, which includes Listed Buildings, is 500m to the northwest. There are also seven Scheduled Monuments to the north, the closest being a pair of bowl barrows 280m southeast of Trinity Methodist Church, forming part of a round barrow cemetery on Sullington Warren and the furthest being Bowl barrow which is 230m northeast of Trinity Methodist Church, forming part of a round barrow cemetery on Sullington Warren.</p> <p>In addition, the WSCC/SDNPA site assessment notes that this site may contain a range of barns which were identified on the '<i>Yeakell & Gardner's map of Southern Sussex of 1778-1783.</i>' Furthermore this site is located on Lower Greensand, where earlier prehistoric occupation (e.g. mesolithic flint scatters) is common. Therefore there is the possibility that '<i>other remains of ancient occupation may be present, below ground and should be taken into account</i>'</p> <p>The study that '<i>development would be acceptable provided that impacts upon any buried archaeological remains can satisfactorily be mitigated. An Archaeological impact assessment is required (archaeological desk-based assessment, and non-invasive and invasive field evaluation).</i>'</p> <p>Therefore, this site is considered likely to have a minor negative effect on these</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>assets. However, there is uncertainty as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is small (2.5 ha) and the southern half of site is grade 4 agricultural land, while the rest of the site is on grade 2 agricultural land; therefore a minor negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site could have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>An AQMA is located approximately 695m to the northwest at the A283 High Street/Manley's Hill, Storrington. The site is also more than 1km from the West Sussex Lorry Route Network, and traffic will therefore travel further along local roads. Therefore, this site has the potential to have a minor negative impact on protecting air quality for human sensitive receptors.</p> <p>The West Sussex Minerals Local Plan: Transport Assessment (2015) estimates that there would be 108 two- way daily AADT movements.</p> <p>In relation to nature conservation the Arun Valley SPA/Ramsar is approximately 5km west of the site, however, traffic from this site is unlikely to travel within 200m of the SPA/Ramsar. However, the WSCC/SDNPA site assessment states that <i>'it has been confirmed that there is not expected to be any change in traffic flows as a result of the operation of this extension because it will be operated sequentially to the existing works rather than cumulatively'</i>. Therefore, only minor negative effects are likely to occur.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
11. To protect and, where possible, enhance water	-?	R -?	<p>The site is not located within SPZ1, however the WSCC/SDNPA site assessment notes that there is a watercourse adjacent to this site, which drains into the River Storr and into the Arun Valley SPA/Ramsar. There is therefore a potential</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
resources, water quality and the function of the water environment.			<p>pathway for sediment to impact this European site. However, the Habitats Regulation Assessment 2015 concludes that the site will not have an adverse effect on the Arun Valley SPA/Ramsar through reduced water flows or quality. Therefore, as the site will not affect the integrity of the SPA/Ramsar a minor uncertain affect is likely.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	R -?	<p>According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the site is identified as having a medium risk (amber) of flooding from sewers and artificial sources. It is noted that no information is available about the proportion of the site at risk of flooding from this source. Therefore development is considered to have a minor negative effect on flood-risk areas. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R-	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'Medium' acceptability rating, subject to '<i>an appropriate transport assessment detailing the impact, including cumulative</i>' and therefore the site could have a minor negative effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>Furthermore, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a minor negative effect is likely for this objective.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
14. To reduce the emissions of greenhouse gases.	-	R -	<p>All sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites are likely to be less intensive than crushed rock site thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>

Rock Common West M/HO/3A

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>The western area of the site is adjacent to Washington Caravan & Camping Park and there are residential properties within the vicinity. Therefore, development at this 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 visitors to the County, and minor negative effects on amenity. However, this 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). It is also dependent on the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would all be assessed at the planning application stage. 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. Therefore, these effects are minor negative uncertain.</p> <p>According to Horsham Council Site Specific Allocations of Land (2007), there are no allocations within 100m of this site. In addition, there are no sites within 100m allocated for new residential development in the Horsham District Planning Framework proposed modifications (March 2015). Therefore, there should not be any land use conflict.</p> <p>According to the West Sussex Waste Local Plan, there are no allocated waste sites within 1km of this site, but there are three existing mineral and waste sites within 1km of the proposed site. The closest is adjacent to the east at Rock Common Sandpit (which this site will form an extension to and therefore extend working at this site). The Rough and Windmill former Landfill Site (currently under restoration) is approximately 460m east of the site, while Washington Chalk Quarry is located approximately 1km south west of the proposed site. Therefore, the site could have a potential cumulative effect on the amenity of the local community.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	--	C --	<p>The site is approximately 80m north of the South Downs National Park (SDNP).</p> <p>Public Footpath No. 2701 crosses the southern area of the site. There are other public footpaths within 250m, the closest being Public Footpath No. 2700 55m to the north of the site, while Public Footpath No. 2630 is 200m away, to the north of the A24.</p> <p>Public Footpath No.2698 is 160m away from the proposed site, Public Footpath No.3181 is 200m away and a village green is approximately 150m away, all to the west of the A283. Therefore, development at this site could lead to significant negative effects on the amenity of users of PROW, and long distance trails, and other users of the countryside in the County, as development would mean either removing part of a facility/open space, or removing or temporarily closing land which has potential for recreation/access to the countryside (e.g. Public Footpath No. 2701).</p> <p>The WSCC/SDNPA site assessment notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>The site could have a significant negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+/-?	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	<p>All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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. Furthermore, as the site is an extension to an existing site, there may not be a net increase in employment but a continuation</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>in employment.</p> <p>This site is also within the Shoreham Airport aeronautical safeguarding zone for bird strike. Therefore it could have minor negative effects on the safe operating of commercial aerodromes/airports if restored to a water-based use that is likely to attract large numbers of birds and increase the risk of bird strike. However, this effect is uncertain as it is dependent on the type of restoration proposed and the eventual development of the site, which will not be known until a later stage in the Minerals Local Plan preparation or even at the planning application stage.</p> <p>Overall, a mixed minor positive/minor negative effect is likely for this SA objective.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	C -	<p>The site is approximately 80m north of the South Downs National Park (SDNP). The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'medium' with the mature perimeter trees and the internal hedgerow features of higher sensitivity.</p> <p>According to the WSCC site assessment, <i>there is 'potential cumulative impact of the Rock Common and Ham Farm sites. The existing Rock Common site should be restored before the extension area is worked'.</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Therefore, the site is considered likely to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	<p>P -?</p> <p>R -?</p> <p>C -?</p>	<p>This site is not within 1km of any national or local designated nature conservation sites or BAP priority habitat. With reference to international designations, the Arun Valley SPA/ SAC/ Ramsar site is 7.7km west of this site, and no pathways connecting any sites were identified in the HRA screening exercise. Therefore, this site was 'screened out' for Appropriate Assessment as part of the updated Habitat Regulation Assessment carried out in 2015.</p> <p>However, the WSCC/SDNPA site assessment notes that the site is near species on the Rare Species Inventory and the existing quarry is of ecological values as it provides support to rare breeding birds, and a sand martin colony. Therefore, a minor negative effect is likely for this objective. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>The site could have a minor negative effect on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	-?	<p>C -?</p>	<p>The existing quarry at Rock Common Sandpit (which this site will form an extension to) is identified as a Local Geological Site. According to data from WSCC <i>'this large quarry is approximately 500m by 250m and the exposures are up to 40m high, thus offering large clean exposures of Folkestone sand. The site is of importance for palaeoenvironmental studies.'</i></p> <p>A minor negative effect is considered likely on this objective, however this would be dependent on the exact nature, working and proposed design of the restoration of the minerals, which would not be known until the planning application stage.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity judgement of 'medium'.</p> <p>This site is within 1km of several historic assets. The closest heritage asset is the Grade II Listed Sandhill Farmhouse 100m north of the site. On the northern side of the A24 there are four other Grade II Listed Buildings, the closest being Rock Place Farmhouse approximately 585m away, while the furthest is Apple Barn 665m away. To the east, approximately 561m away is the Grade II Listed Rock Windmill and Green Farmhouse, is 460m from the site. Green Common Farmhouse is located approximately 280m to the south. 480m to the west is Rowdell House Historic Parkscape and Washington Conservation Area which includes listed buildings, is 220m away.</p> <p>The LUC 2015 Addendum notes that <i>'the closest heritage asset to the site is the Grade II Listed Sandhill Farmhouse located 100 metres of the northern tip of the site, it is unlikely the site would be visible from the listed building due to intervening vegetation and built form. There are a handful of listed buildings within the Washington Conservation Area, approximately 240 metres to the south west of the site, the closest being the Grade II Listed Brook House, but there is no visibility of the site due to woodland bounding the A283 road corridor. There is theoretically potential visibility from Chanctonbury Ring (identified in the ZTV analysis), though actual visibility from the Scheduled Monument is restricted due to intervening woodland and the trees that surround it.'</i></p> <p>The WSCC/SDNPA site assessment notes that an Archaeological desk-based assessment, followed by geophysical survey carried out in 2008, on the southern part of the site, in connection with planning application DC/401/07, revealed only geological features. Therefore, there is some uncertainty as to whether any buried archaeological features remain. It adds that development would be acceptable subject to further archaeological assessment and mitigation measures, including an invasive archaeological investigation and mitigation of the visual impact of mineral working upon nearby Listed Buildings.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Therefore, this site is considered likely to have a minor negative effect on these assets. However, there is uncertainty as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>This site is not within grade 1, 2 or 3 agricultural land and therefore considered unlikely to have an effect on protecting or enhancing soil/land quality.</p> <p>This site is likely to have negligible effects on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>This site is not within 1km of an AQMA but the WSCC/SDNPA site assessment notes that '<i>site traffic may pass through the AQMA at the A283 High Street/Manley's Hill, Storrington</i>' 3.5km to the northwest. However, the WSCC/SDNPA site assessment also states that if traffic were to have a negative impact on an AQMA, then an Air Quality Assessment would also be required.</p> <p>The West Sussex Minerals Local Plan: Transport Assessment (2015) estimates that there would be 108 two- way daily AADT movements.</p> <p>In relation to nature conservation, there are no international designated sites within 10km of this site; therefore this site was '<i>screened out</i>' for Appropriate Assessment, as it was deemed there would not be any scope for air pollution pathways connecting any European Sites. It is therefore unlikely that traffic from this site will pass within 200m of an international designated nature conservation site.</p> <p>Therefore, development at this proposed site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	--?	R --?	<p>The site is not within an SPZ1 but there is a water body which passes through the northern area of the site. The WSCC/SDNPA site assessment notes that as this site will potentially be used for deep quarrying the impact on water resources is more complicated. Current site de-watering is around 30m below the natural groundwater table; therefore, any additional de-watering operations could result in additional discharge to Honeybridge Stream. Furthermore, any extension to the existing site is likely to result in implications to the existing landfill site, which is adjacent to the east of the proposed site, and the existing environmental conditions regarding maintenance of the unsaturated zone. This may have implications on the final restoration proposals for the main Rock Common Sandpit.</p> <p>The WSCC/SDNPA site assessment recommends that a Risk Assessment of the water environment (Qualitative Hydrological & Hydrogeological Risk Assessment) is undertaken. Due to the complexities the Environment Agency has recommended phase 1 and 2 assessments prior to allocation.</p> <p>This site was 'screened out' for Appropriate Assessment as part of the updated Habitat Regulation Assessment carried out in 2015. It is therefore unlikely that an adverse effect on the integrity of international nature conservation sites will occur.</p> <p>Therefore, a significant negative effect is likely but this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>The site could have a significant negative effect on regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>This site is within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) the site is identified as having no effect (green) on all or most of the flooding sources, except in relation to surface water where a low risk (yellow) was identified owing to 10% of the site being at higher risk of susceptibility.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Therefore development at this site is considered unlikely to have an effect on flood risk areas and unlikely to increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site is likely to have negligible effects on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-	R 0/-	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'High' acceptability rating, subject to <i>'an appropriate transport assessment detailing the impact, including cumulative'</i> and therefore the site could have a negligible effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>However, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a mixed negligible /minor negative effect is likely for this objective.</p> <p>The site could have a mixed negligible /minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to Horsham Council Site Specific Allocations of Land (2007), this site is within 10km of strategic development allocations. This includes a site in Washington 195m south west of this site, the Royal Air Forces Association site at Storrington and Sullington, village, 2.9km to the west of the site and several sites in Ashington, 2km to the north of the site. Therefore, development at this site could contribute to reducing transport distances of aggregates for construction, although given the age of the Horsham Allocations plan, some of these strategic allocations may already be developed.</p> <p>All mineral sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Ham Farm M/HO/4 – note that the boundary for Ham Farm was reduced following the Regulation 18 consultation on the Draft JMLP. Therefore, this appraisal matrix has been updated to reflect the implications of that revised boundary by adding a second SA score column. Where a SA score has changed or the reduced boundary has implications for the assessment of the site, this is explained in bold text in the Justification column.

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There are residential properties to the east and northwest of this site. Therefore, development at this 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 visitors to the County, and minor negative effects on amenity. However, this 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). It is also dependent on the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would all be assessed at the planning application stage. 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. Therefore, these effects are minor negative uncertain.</p> <p>According to Horsham Council Site Specific Allocations of Land (2007), there are no allocations within 100m of this site. In addition, there are no sites within 100m allocated for new residential development in the Horsham Council District Planning Framework proposed modifications (March 2015). Therefore, there should not be any land use conflict.</p> <p>The site is not within 1km of any settlements. In addition, according to the West Sussex Waste Local Plan, there are no allocated waste sites, nor are there existing mineral or waste</p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
				sites within 1km of the proposed site. Therefore, this site is unlikely to have potential cumulative effects on the amenity of the local community.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	-	C -	<p>This site is approximately 20m north of the South Downs National Park.</p> <p>Public Footpath no 2599 runs to the north and west of the site. In addition, Footpath no. 2514 is located approximately 180m north west of the proposed site. The WSCC/SDNPA site assessment notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>Therefore, development at this site could have a minor negative effect on the amenity of users of PROW and other users of the countryside in the County, or enjoyment of the National Park by making the facilities/countryside less attractive for users and impacting on amenity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	+	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
				employment opportunities likely to be provided within the County is not considered to be significant.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-	-	C -	<p>This site is approximately 20m north of the South Downs National Park.</p> <p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'medium' with the northern fringes and western fringes of higher sensitivity. The LUC 2016 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity to sand extraction of 'medium'. The WSCC site assessment goes on to add that <i>'the site is visually sensitive in views from the top of the scarp in sections where woodland does not block wider views. The ZTV shows visibility from Wiston Park and it is likely that there would be some negative experiential impacts (tranquillity, remoteness) on visitors to the parkscape should this site come forward. Views to the south from the parkscape would not be affected. Design of</i></p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
				<p><i>the site operations should be undertaken sensitively and with appropriate levels of screening. Existing trees around the perimeter of the site should be retained. The entrance to the site should be carefully designed to minimise urbanising impacts on the SDNPA. Works should be carefully phased to minimise impacts. Specific restoration plan to agriculture would be desirable for this site given its rural location.'</i> Furthermore, there is potential 'for cumulative impacts with Rock common. Phasing of working and restoration required should both sites come forward'.</p> <p>Therefore, the site is considered likely to have a minor negative effect on designated landscapes, local landscape character or tranquillity.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	--?	P --? R --? C --?	<p>The WSCC site assessment noted that the site is adjacent to Ancient Semi Natural Woodland (Great Alder Wood) to the east. In addition, Little Alder Wood is located immediately adjacent to the site to the north. There are no international biodiversity sites within 10km. This site was therefore 'screened out' for Appropriate Assessment as part of the updated Habitat Regulation Assessment carried out in 2015, as adverse effects on the integrity of international sites were ruled out.</p> <p>However, this site is considered to have a significant negative effect on biodiversity, due to its close proximity to ancient woodland. This effect would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>The site could have significant negative effects on provisioning,</p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
				regulatory and cultural ecosystem services.
7. To protect and conserve geodiversity.	0	0	C 0	<p>There is no national site of geological interest (SSSI) or Local Geological Site within 500m of this proposed site, therefore it is considered unlikely to affect this objective.</p> <p>The site is likely to have negligible effects on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	-?	C -?	<p>The LUC 2015 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity judgement of 'low-medium'.</p> <p>This site is within 1km of several historic assets. The closest heritage asset is the Grade II Listed Horsebrook Cottage, which is within 100m of the western boundary. To the east there are several Grade II Listed buildings, the closest being Water Tower and Sun Room at Wappingthorn which is approximately 530m away. Wiston Park historic parkscape, which includes Listed Buildings is located to the south west on the opposite side of Washington Road.</p> <p>The LUC 2016 Addendum Landscape Sensitivity and Capacity Study also assessed this site with its revised boundary as having a cultural heritage sensitivity judgement of 'low-medium'.</p> <p>This site is within 1km of several historic assets. The closest heritage asset is Wiston Park historic parkscape, which includes Listed Buildings and is located to the south west of the site on the opposite side of Washington Road. The Grade II Listed Horsebrook Cottage is within 100m of the western boundary. To the east there are several Grade</p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
				<p>II Listed buildings, the closest being Water Tower and Sun Room at Wappingthorn which is approximately 760m away.</p> <p>According to the WSCC/SDNPA site assessment, a hand-axe of Palaeolithic date has been reported from just north of the site and there is the potential that other archaeological remains may exist within the site. The WSCC/SDNPA site assessment states that the visual impact upon Horsebrook Cottage and any buried archaeological remain must be satisfactorily mitigated. An archaeological impact assessment and Historic Building visual impact assessment would be required to be submitted with any planning application.</p> <p>Therefore, this site is considered likely to have a minor negative effect on these assets. However, there is uncertainty as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	-	R -	<p>This is a small to medium site (16.31 ha) and is partially within grade 2 and 3 agricultural land. With the revised boundary, the site is still considered small to medium (8.9 ha) and it is only within grade 3 agricultural land. Therefore, development at this site could have a minor negative effect on protecting or enhancing soil/land quality.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	-?	R -?	<p>This site is not within 1km of an Air Quality Management Area. However the WSCC/SDNPA site assessment notes that '<i>site traffic may pass through the AQMA at the A283 High Street/Manley's Hill, Storrington</i>' approximately 7km west of this site. Therefore, this site has the potential to have a minor negative impact on protecting air quality for human sensitive receptors.</p> <p>The West Sussex Minerals Local Plan: Addendum Transport Assessment Ham Farm (October 2016) estimates that there would be 192 two- way daily AADT movements.</p> <p>In relation to nature conservation, there are no international designated sites within 10km of this site, therefore this site has been 'screened out' for Appropriate Assessment in relation to air pollution as part of the updated Habitat Regulation Assessment carried out in 2015.</p> <p>Therefore, development at this proposed site is considered likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the	--?	-?	R --? (-? with revised site boundary)	<p>The site is not located within SPZ1 but the WSCC/SDNPA site assessment notes that there are several surface water streams running along the boundaries of the site. With the revised site boundary, there is only one surface water stream running</p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
water environment.				<p>along the north western boundary of the site, but also a very small water body in the northern corner of the site.</p> <p>This site has been 'screened out' for Appropriate Assessment as part of the updated Habitats Regulations Assessment carried out in 2015.</p> <p>Therefore, the site has the potential to have a significant negative effect on this objective as it is adjacent to surface water bodies.</p> <p>With the revised site boundary, the site has the potential for a minor negative effect as it is only adjacent to one surface water body. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	-?	R -?	<p>This site is within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) this site was identified as having no effect (green) on most of the flooding sources. However, a low risk (yellow) was found in relation to surface water as 10% of site was at risk. In addition, a large part of the site (50%) is identified as having a high risk (red) in relation to ground water. Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site could have a minor negative effect on regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-	0/-	R 0/-	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'High' acceptability rating, subject to '<i>an appropriate transport assessment detailing the impact, including cumulative</i>' and therefore the site could have a negligible effect on reducing the impacts of lorry traffic on the environment and communities. The 2016 updated Transport Assessment for the revised site boundary also rated this site as having a 'high' acceptability.</p> <p>However, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a mixed negligible /minor negative effect is likely for this objective.</p> <p>The site could have a mixed negligible /minor negative effect on regulating ecosystem services.</p>

SA Objective and Sub Questions	SA Score (Reg. 18 boundary)	SA Score (Reg. 19 boundary)	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
14. To reduce the emissions of greenhouse gases.	+/-	+/-	R +/-	<p>According to Horsham Council Site Specific Allocations of Land (2007), this site is located within 10km of strategic site allocations. This includes land allocated in Washington 4km west of this site, the Royal Air Forces Association site in Storrington and Sullington village, 7km to the northwest of the site and several sites in Ashington, 3.5km to the north of this site. For the revised boundary this includes land allocated in Washington 4km west of this site, the Royal Air Forces Association site in Storrington and Sullington village, 7km to the west of the site and several sites in Ashington, 4km to the northwest of this site. Therefore, development at this site could contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Buncton Manor Farm M/HO/7

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>The eastern area of the site is within 100m of the Butchers House on Water Lane and another property (Polecats Cottages) to the south east of the site. Therefore, development at this 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 visitors to the County, and minor negative effects on amenity. However, this 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). It is also dependent on the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would all be assessed at the planning application stage. 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. Therefore, these effects are minor negative uncertain.</p> <p>According to Horsham Council Site Specific Allocations of Land (2007), there are no allocations within 100m of this site. In addition, there are no sites within 100m allocated for new residential development in the Horsham District Planning Framework proposed modifications (March 2015). Therefore, there should not be any land use conflict.</p> <p>According to the West Sussex Waste Local Plan, there are no allocated waste sites within 1km of this site, but there are two existing mineral and waste sites within 1km of the proposed site. The closest is adjacent to the west at Rock Common Sandpit, which has ceased operation, but the land to the west of the site which is being considered in the JMLP, would therefore extend the working of the Rock Common sandpit site. The Rough and Windmill former Landfill Site (currently under restoration) is adjacent to the south-west of the site.</p> <p>Therefore, the site could have a potential cumulative effect on the amenity of the local community.</p>

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2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	C -	<p>The site entrance is approximately 6m from the South Downs National Park, which is located to the south of the A263. The majority of the site is otherwise generally over 100m from South Downs National Park. There is no PROW within the site; however, Public Footpath No. 2709 is located approximately 235m to the east.</p> <p>Therefore, development at this site could lead to minor negative effects on the amenity of users of PROWs, and other users of the countryside in the County, or enjoyment of the National Park by making the facilities/countryside less attractive for users and impacting on amenity.</p> <p>The WSCC/SDNPA site assessment notes that '<i>opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.</i>'</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+/-?	N/A. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	<p>All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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.</p> <p>This site is also within the Shoreham Airport aeronautical safeguarding zone for bird strike. Therefore, it could have minor negative effects on the safe operating of commercial aerodromes/airports if restored to a water-based use that is likely to attract large numbers of birds and increase the risk of bird strike. However, this effect is uncertain as it is dependent on the type of restoration proposed and the eventual development of the site, which will not be known until a later stage</p>

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			in the Minerals Local Plan preparation or even at the planning application stage. Overall, a mixed minor positive/minor negative effect is likely for this SA objective.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a minor positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	--	C --	The site entrance is approximately 6m from the South Downs National Park, which is located to the south of the A263. The majority of the site is otherwise generally over 100m from South Downs National Park. The LUC 2016 Addendum Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'Medium-High' sensitivity to extraction. The study states that <i>'The site comprises several small to medium scale arable fields, with an irregular field pattern. The site does not contain any landmark features, although it forms part of the wider setting of the South Downs escarpment and is within the setting of the South Downs National Park. The site has a rural and tranquil feel although this is degraded somewhat by lights and noise from vehicles on the A283. The tranquillity would be reduced further by the introduction of a new mineral working into the landscape. More sensitive features include the hedgerows and mature trees (particularly in the west and north of the site) and the gently sloping profile of the land.'</i> Furthermore, <i>'the tranquillity and rural nature of the site would be impacted upon by mineral extraction. Operations within the more open and exposed part of the site to the east are more likely to visually intrude on surrounding areas</i>

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			<p>including the South Downs National Park (including the National Trail and Chanctonbury Hill Scheduled Monument), although there is potential to further limit views into the site’.</p> <p>Therefore, development at this site could be more likely to have a significant negative effect on designated landscapes, local landscape character and/or tranquillity.</p> <p>The site could have a significant negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	<p>P -?</p> <p>R -?</p> <p>C -?</p>	<p>This site is not within 1km of any national or local designated nature conservation sites or BAP priority habitat.</p> <p>With reference to international designations, the Arun Valley SPA/ SAC/ Ramsar site is 8.1km west of this site, and no pathways connecting any sites were identified in the HRA screening exercise. Therefore, this site was ‘screened out’ for Appropriate Assessment as part of the updated Habitat Regulation Assessment carried out in 2016.</p> <p>However, the WSCC/SDNPA site assessment notes that although the site itself is not known to be of a particular ecological value, the site is near a number of areas of Ancient Woodland, the closest is within 20 metres to the south east of the site. In addition, there are several woodlands within 500m of the site, including Oatash Row Copse to the north, Copyhold Wood and Newcommon Copse to the south. There are also several small watercourse within the site and within close proximity to the site in the north and south east. The WSCC/SDNPA site assessment notes that ‘these ‘ultimately drain into the River Adur. There could be some ecological sensitivities associated with these’.</p> <p>The WSCC/SDNPA site assessment also notes that the site is ‘150 metres north of the Lower Adur Arun Watershed Biodiversity Opportunity Area’.</p> <p>A minor negative effect is considered likely on this objective, however this would be dependent on the exact nature, working and proposed design of the restoration of the minerals, which would not be known until the planning</p>

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			<p>application stage.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	-?	C -?	<p>The former quarry at Rock Common Sandpit is approximately 460m to the west of the site and is identified as a Local Geological Site. According to data from WSCC <i>'this large quarry is approximately 500m by 250m and the exposures are up to 40m high, thus offering large clean exposures of Folkestone sand. The site is of importance for palaeoenvironmental studies.'</i></p> <p>A minor negative effect is considered likely on this objective, however this would be dependent on the exact nature, working and proposed design of the restoration of the mineral site, which would not be known until the planning application stage.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The LUC 2016 Addendum Landscape Sensitivity and Capacity Study assessed this site as having a cultural heritage sensitivity judgement of 'medium'.</p> <p>This site is within 1km of several historic assets. The closest heritage asset is the Grade II Listed Polecats Cottage to the south east. Also to the north east along Water Lane are Yew Tree Cottage, Butchers Farmhouse and the Post Office Wiston Stores, which are all within 400m of the site. To the north there are four Grade II Listed buildings, the closest being Upper Chancton Farmhouse, which is 570m away, Sideways and the cottage adjoining Sideways which is 650m away and Abbotts Farmhouse, which is 650m away. To the west, there are six listed buildings. The closest being Rock Windmill, 400m away, while the farthest is Apple Barn approximately 1km away on the western side of the A24 London Road. To the south of the A263, the historical parkscape at Wilston Park is approximately 430m away. There are also four Grade II Listed Buildings within 1km to the south. The closest is Lower Chancton approximately 390m away and Green Common Farmhouse approximately 970m away from the site.</p> <p>The WSCC/SDNPA site assessment notes that there is a documented Late Anglo</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Saxon Estate boundary which is an undesignated archaeological/ historical feature potentially of national significance in the centre of the proposed site. The WSCC/SDNP site assessment recommends that <i>'further information, through desk-based and field-based non-intrusive and intrusive archaeological assessment is required in respect of this feature.'</i></p> <p>Furthermore, <i>'the western area of the site is in an amber scale Environment Record (HER) Archaeological Notification Area, as the site is just outside an area of recorded prehistoric, Roman and later sites in Rock Common Quarry. Immediately adjacent to the north-central part of the proposal site runs the projected alignment of the Sussex Greensand Way Roman road, mapped as an HER record. Related prehistoric, Roman and later features and artefacts may exist below ground within the proposal site and these have been identified as potential local/ regional significance'.</i></p> <p>Therefore, this site is considered likely to have a minor negative effect on these assets. However, there is uncertainty as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is large (23 ha with approximately 20 ha suitable for development) and is mainly on grade 3 agricultural land. Therefore, a minor negative effect on protecting or enhancing soil/land quality is likely.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-	R -	<p>This site is not within 1km of an AQMA but the WSCC/SDNPA site assessment notes that <i>'traffic from this site may pass through the AQMA at the A283 High Street/Manley's Hill, Storrington is 4km west of the site and, in the absence of any specific routing, this road could be used by vehicles accessing or leaving the site'</i></p>

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			<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) estimates that there would be 72 two- way daily AADT movements. The WSCC/SDNPA site assessment notes that three site access options were considered, but the direct route <u>onto the A283 via the existing private access to the farm was the preferred route, however this forms the boundary of the SDNP. Therefore, 'access would need to be substantially upgraded before it could be considered suitable'.</u></p> <p>In relation to nature conservation, the HRA update report (2016) states that 'The Arun Valley SPA/ SAC/ Ramsar site is 8.1km from this site. There are no impact pathways present'. Therefore this site was 'screened out' for Appropriate Assessment, as it was concluded there would not be any scope for air pollution pathways connecting any European Sites.</p> <p>Overall, development at this proposed site is likely to have a minor negative impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site could have a minor negative effect on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	--?	R --?	<p>The site is not within an SPZ1 but there is a water body which passes along the northern boundary and through the central area of the site. The WSCC/SDNPA site assessment notes that this site does not lie within a groundwater protection zone, but EA maps indicate that the south western part of the site is part of the Principal Aquifer and small parts of the site are Secondary (undifferentiated) Aquifer. It goes onto add that the site is within groundwater Vulnerability Zones: Major Aquifer (intermediate). Furthermore, 'whilst there has been minor highway flooding in the area there have been no incidents of flooding at the site itself. There is a low risk of surface water flooding, although the watercourse which runs across the boundary would need to be managed at all times.'</p>

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			<p>The WSCC/SDNPA site assessment recommends that 'there should be no below groundwater table quarrying. As groundwater is being dewatered at Rock Common, groundwater levels underneath the site are unlikely to be representative of natural conditions. Therefore groundwater monitoring and an assessment will have to be made on the natural groundwater table at this site'.</p> <p>The WSCC/SDNPA site assessment also reports that consultation with the Environment Agency in 2015 also noted that 'Windmill Landfill lies adjacent to the site - the development must not have any detrimental impact upon the infrastructure of the landfill. Therefore, an assessment needs to be made on what is a safe working/quarrying distance that can be made. Constraints include but not limited to locations of boreholes (Gas & Groundwater) infrastructure, engineered liner and surface water drainage system'.</p> <p>This site was 'screened out' for Appropriate Assessment as part of the updated Habitat Regulation Assessment carried out in 2016. It is therefore unlikely that an adverse effect on the integrity of international nature conservation sites will occur.</p> <p>Despite the HRA conclusion, a potential significant negative effect on water quality is considered likely but this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>The site could have a significant negative effect on regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>This site is within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (January 2016) the site is identified as having no effect (green) on all flooding sources.</p> <p>Therefore development at this site is considered unlikely to have an effect on flood risk areas and unlikely to increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p>

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			The site is likely to have negligible effects on regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-	R 0/-	<p>The West Sussex Minerals Local Plan: Transport Assessment (2016) assessed this site as having a 'High' acceptability rating, subject to '<i>an appropriate transport assessment detailing the impact, including cumulative</i>' and therefore the site could have a negligible effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>However, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a mixed negligible /minor negative effect is likely for this objective.</p> <p>The site could have a mixed negligible /minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>According to Horsham Council Site Specific Allocations of Land (2007), this site is within 10km of strategic development allocations. This includes a site in Washington 1.3km south west of this site, the Royal Air Forces Association site at Storrington and Sullington, village, 3.6km to the west of the site and several sites in Ashington, 1.5km to the north of the site. Therefore, development at this site could contribute to reducing transport distances of aggregates for construction, although given the age of the Horsham Allocations plan, some of these strategic allocations may already be developed.</p> <p>All mineral sites could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although soft sand, such as this site, are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating</p>

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			ecosystem services.

Land adjacent to West Hoathly Brickworks M/MS/1

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1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A. Protection of health and well-being would be supported by all four of the categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.	<p>There are residential properties within 100m to the east and south east. Therefore, development at this 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 County, and minor negative effects on amenity. However, this 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). It is also dependent on the scale of the operations and the type of activities undertaken within the site and potential mitigation measures proposed, which would all be assessed at the planning application stage. 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. Therefore, these effects are minor negative uncertain.</p> <p>There are no sites within 100m of any areas allocated for new residential development in the Mid Sussex District Plan 2014 – 2031, Pre-Submission Draft (June 2015). The WSCC/SDNPA site assessment states that land to the south west of the site has been identified for housing development in the West Hoathly Neighbourhood Plan 2014-2031 Submission Document (September, 2014).</p> <p>This site is not within 1km of an allocated waste site in the West Sussex Waste Local Plan or any existing mineral or waste sites, nonetheless, the allocation of sites nearby (e.g. for housing development), could mean that this site could have a cumulative effect on the amenity of the local community.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights	-	C -	<p>There are no PROWs including long distance trails within the site or within 250m. According to the WSCC site assessment study, <i>'opportunities to enhance future public access will be pursued by the PROW Teams through any future planning application.'</i></p> <p>The site is, however, located within the High Weald AONB and is adjacent to the</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
of Way (PROW).			<p>Bluebell Railway. Therefore, development at this site could a minor negative effect on the enjoyment of the AONB by making the facilities/countryside less attractive for users and impacting on amenity.</p> <p>Therefore, development at this site could have a minor positive effect on the amenity of users of PROW and other users of the countryside in the County.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.	<p>All minerals 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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. Furthermore, as the site is an extension to an existing site, there may not be a net increase in employment but a continuation in employment.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites are not classed as inappropriate development with respect to sterilisation of mineral resources; however, allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the	--	C --	This site is located within High Weald AONB.

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landscape, local distinctiveness and landscape character in West Sussex.			<p>The LUC 2011 Landscape Sensitivity and Capacity Study assessed the site as having an overall landscape sensitivity of 'medium to high', with the east of the site of higher sensitivity due to the proximity of the village of Sharpthorne, the Historic Park and Garden to the south and the higher visual sensitivity of the area.</p> <p>Table 4.4 (LUC 2011 Landscape Study), summarises the key landscape, visual and landscape value sensitivities and issues. It is noted that <i>'the subtle complexity of the landscape structure of the site and the adjacent areas of ancient woodland as well as its intervisibility with a wider area of the High Weald AONB reduces the capacity of the site to accommodate development without some erosion of the character and habitat value of the surrounding area. However the low-lying topography allows scope for the mitigation of visual intrusion by planting to reduce visibility from the hills to the northwest. A degree of enclosure is provided by existing woodland and hedgerows, and the lower area to the northwest of the area has a slightly greater capacity to accommodate workings, with reduced visibility from the road and the village to the south and southeast. There is also the potential for cumulative impact on the key characteristics and special qualities of the High Weald AONB landscape in relation to the extension of the existing workings further eastwards.'</i></p> <p>Therefore, development at this site could be more likely to have a significant negative effect on designated landscapes, local landscape character and/or tranquillity.</p> <p>The site could have a significant negative effect on cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --</p> <p>R --</p> <p>C --</p>	<p>The WSCC/SDNPA site assessment notes that the site is adjacent to Ancient Woodland (Front Wood to the north east, Blackwood Wood and Cookhams Shaw to the west) and that buffers of between 20m and 100m would be required between the woodland and the site. In addition, West Hoathly SSSI is approximately 310m west of the site.</p> <p>In relation to international designations, Ashdown Forest SPA/SAC is</p>

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			<p>approximately 1.5km east of the site. In addition, this site also includes a small waterway which feeds into a number of tributaries which eventually reach the Medway Estuary and Marshes SPA/Ramsar. This site has been 'screened in' for Appropriate Assessment as part of the Habitat Regulation Assessment 2015.</p> <p>The HRA report noted that although increases in traffic could affect Ashdown Forest SPA/ SAC and potentially disturb bird species for which the SPA is designated, <i>'...it has been confirmed that there is not expected to be any change in traffic flows as a result of the operation of this extension because it will be operated sequentially to the existing works rather than cumulatively.'</i></p> <p>In relation to potential pathways for sediment to impact the Medway Estuary and Marshes SPA/Ramsar , it was concluded that <i>'due to the large distances involved any increase in sediment that might arise from dewatering associated with this minerals site would be subject to such a scale of dilution that its effect on the SPA/Ramsar site would be negligible. Moreover, it is assumed that sediment loading in watercourses near the site will be controlled by conditions since it is an offence to pollute surface watercourses irrespective of whether they drain to a European site or not. It can therefore be concluded that this minerals site will not have any likely significant effects on any European designated sites through changes in water quality.'</i></p> <p>While significant effects on the integrity of the SAC/SPA/Ramsar sites have been ruled out, significant negative effects on this objective are still possible due to the site's proximity to Ancient Woodland and West Hoathly SSSI. However, these effects would be uncertain as the potential for effects will depend on the exact nature and design of new sites.</p> <p>Therefore, a significant negative effect is considered likely for this objective.</p> <p>The site could have a significant negative effect on provisioning, regulatory and cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	-?	C -?	There is a national site of geological interest (SSSI) and Local Geological Site

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			<p>within 500m to the west of this proposed site.</p> <p>West Hoathly SSSI is approximately 310m west of the site and has been designated due to signs of <i>'gradual passage upwards from silty mudstone with plant detritus and ironstone bands to less silty and non-silty clays with layers of Neomiodon shells, overall suggesting a waning of terrestrial influence. Importantly, some of the shells are aragonitic, their 13C/12C ratios suggesting temporarily enhanced salinities. From time to time Ashdown Beds, capped by the discontinuous Top Pebble Bed, have been exposed in ditches in the pit floor. West Hoathly lies at a critical position near the northwest extremity of the Wealden Wadhurst Clay outcrop. During Wealden times, this position lay close to the postulated gap in the London Massif (bounding the northern edge of the Wealden Basin) through which the northern Boreal Sea intermittently flooded.'</i>¹⁵⁰</p> <p>The existing quarry at West Hoathly Brickworks, Sharphorne is approximately 140m from the site and is designated as a Local Geological Site. Therefore, it is considered that a minor negative affect is likely to occur for 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.</p> <p>The site is considered to have a minor negative effect on cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>This site is within 1km of five historic assets. The closest is Courtlands West Hoathly Historic Parkscape to the south of Top Road. Also to the south is Northwood House Historic Parkscape 880m away and Aldern House Grade II Listed Building. In addition, there are two other Listed Buildings to the north; Old Coombe House, 861m away and Blackland Farmhouse 930m away.</p> <p>The WSCC/SDNPA site assessment study also notes that a large number of mine pits associated with historic iron ore extraction have been identified and</p>

¹⁵⁰Natural England (2015) http://www.sssi.naturalengland.org.uk/citation/citation_photo/2000280.pdf

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			<p>recorded in the course of extraction during previous planning permissions. It is therefore expected that similar features are to be found if the site is brought forward for mineral use. The site assessment also states that if the site is worked then further features are expected to be found and that mitigation measures for recording should be required. Furthermore the site assessment states that a '<i>Lidar survey should be undertaken to evaluate features in woodland. Evaluation should be undertaken pre-determination and the results made available to consider at the application stage.</i>'</p> <p>Therefore, this site is considered likely to have a minor negative effect on these assets. However, there is uncertainty as a more detailed assessment would be required once proposals are known.</p> <p>The site could have a minor negative effect on cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>This site is small to medium (9 ha) and is located on grade 3 agricultural land, although the WSCC notes that it is '<i>not used for agricultural purposes</i>'. Therefore, development at this site could have a minor negative effect on protecting or enhancing soil/land quality.</p> <p>This site is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0?	R 0	<p>The site is not within 1km of an AQMA.</p> <p>This site has been 'screened in' for Appropriate Assessment as part of the Habitat Regulation Assessment 2015. In the assessment, the report notes that '<i>it is assumed that site traffic will use the A22 and A275 which bisects this SPA/SAC. However, it has been confirmed that there is not expected to be any change in traffic flows as a result of the operation of this extension because it will be operated sequentially to the existing works rather than cumulatively.</i>'</p> <p>The West Sussex Minerals Local Plan: Transport Assessment (2015) states that '<i>as the Brickworks is an existing and active site with established traffic</i></p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p><i>movements which (as noted in Section 15.2 of the assessment) were accounted for by the traffic survey, the project team decided that there was no need to calculate any additional development-related traffic'.</i></p> <p>In addition to considering the impact upon water quality, the report concluded that this minerals site will not have any likely significant effects on any European designated sites.</p> <p>Therefore, the site is unlikely to have an impact on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HGVs, 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.</p> <p>The site is unlikely to have any impact on the regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>The site is not located within SPZ1 and is not within or adjacent to a water body.</p> <p>Therefore at this stage in the planning process it is not possible to determine the impacts of minerals sites on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the proposal (mineral type, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>An uncertain effect on the regulating ecosystem services is likely.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>This site is within Flood Zone 1. According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) this site is identified as having no effect (green) on most of the flooding sources, with the exception to surface water where a low risk (yellow) was identified for a small part of the site (10%).</p> <p>Therefore, development is considered unlikely to have an effect on flood risk areas and unlikely to increase the risk of flooding elsewhere. However, these effects would be uncertain as a more detailed site-specific FRA would be required once proposals are known at the planning application stage.</p> <p>The site is likely to have a negligible effect on regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-	R 0/-	<p>The West Sussex Minerals Local Plan: Transport Assessment (2015) assessed this site as having a 'High' acceptability rating, <i>'provided that there are no increases in traffic movements associated with the site, it is assumed that the site would continue to operate as it currently does'</i>. Therefore, development is considered to have a negligible effect on reducing the impacts of lorry traffic on the environment and communities.</p> <p>However, all sites that do not have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>Overall, a mixed negligible /minor negative effect is likely for this objective.</p> <p>The site could have a mixed negligible /minor negative effect on regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>The WSCC/SDNPA site assessment states that land to the south west of the site has been identified for housing development in the West Hoathly Neighbourhood Plan 2014-2031 Submission Document (September, 2014). Therefore, development at this site could contribute to reducing transport distances of aggregates for construction.</p> <p>However, all sites could lead to the production of carbon dioxide or other</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, and clay sites (such as this site) are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, all sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The site could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Appendix 8

SA Matrices for Proposed Submission Draft JMLP Strategic Policies

Policy M1 – Sharp Sand & Gravel

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-	N/A	<p>Policy M1 may have minor negative impacts on health, well-being and amenity. The policy supports the maintenance of supplies from existing permitted reserves of sharp sand and gravel. Therefore, this may continue to subject residents, neighbouring land uses and visitors to West Sussex to impacts such as dust, noise, vibration and traffic associated with the existing mineral workings. However, the policy may also have minor positive effects as it also includes maintaining supplies from existing permitted reserves by including extensions to existing sites therefore not resulting in new sites or impacts on previously unaffected residents, neighbouring land uses and visitors to West Sussex. Therefore, mixed minor positive/minor negative effects are expected on this SA objective.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>Policy M1 could have minor negative effects on this SA objective as new sites that could come forward under this policy could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor positive effect is also identified. 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 'windfall' sites, which would not be known until the planning application stage.</p> <p>Policy M1 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Policy M1 is likely to have minor positive effects on this SA objective, as allowing sharp sand and gravel 'windfall' sites to come forward in certain circumstances which includes the expansion of existing sites is likely to have positive effects, as minerals are essential to sustain and enhance the vitality and viability of the local economy.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Policy M1 is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves and 'windfall' sites will not be classed as inappropriate development, as it will contribute to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as continued extraction from existing permitted reserves will not reduce the extraction of virgin materials. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>Policy M1 is likely to have minor positive effects on this SA objective as in the long term the restoration of the existing site (Kingsham Quarry) which contains the existing permitted reserves and potential 'windfall' sites could lead to positive effects for the landscape via the restoration of the site. Additionally, the policy also states that any new proposals are located outside of the South Downs National Park and AONB; which are regarded as areas of high landscape value. However, minor negative effects are also</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			likely as continued extraction in the short term/long term could result in continued impacts on the landscape. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective. These effects are uncertain as the potential for positive effects will not be known until the later stages of the sites working life. Mixed minor positive and minor negative uncertain effects are likely for policy M1 in relation to Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+/-?	P +/-? R +/-? C +/-?	Policy M1 is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves as Kingsham Quarry will prolong the life of the site, which may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. This is also applicable to any potential 'windfall' sites that are to be worked for sand and gravel. However, minor negative effects are also possible due to the continuation of working thereby impacting on designated sites, protected species or habitats. The policy is likely to have mixed, minor positive and minor negative effects on this SA objective. These effects are uncertain as the potential for positive effects will not be known until the later stages of the sites working life. Mixed minor negative and minor positive uncertain effects are considered likely for policy M1 in relation to Provisioning, Regulatory and Cultural ecosystem services.
7. To protect and conserve geodiversity.	+/-?	C +/-?	Policy M1 may lead to minor negative effects as the continued extraction of existing permitted reserves may uncover and harm geological interests. However, the existing site (Kingsham Quarry) and any potential additional 'windfall' sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. The policy is likely to have mixed,

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>minor positive and minor negative effects on this SA objective. However, the effects would be uncertain as the potential for effects will depend on what geological features may or may not be uncovered during the working life of the permitted reserves.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for Policy M1 in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>Policy M1 is likely to have minor negative effects on this SA objective, as the continuation of working at Kingsham Quarry and any potential 'windfall sites' could negatively affect the historic environment (e.g. archaeology), heritage assets and their setting as a result of associated mineral activities. However, the site may be able to preserve any uncovered findings and therefore benefit our understanding of the local archaeology or contribute towards the local vernacular. The 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 what historic environment features may or may not be affected or uncovered during the working life of the permitted reserves.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for Policy M1 in relation to Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	<p>As Policy M1 supports the use of permitted reserves, any effects or potential enhancements on soil quality would have already been appropriately dealt during the determination of the relevant planning application, as would the aim of minimising the loss of best and most versatile land. Therefore, further effects are unlikely. However, Policy M1 also enables 'windfall' sites to come forward in certain circumstances, and extraction of new sites may result in the loss of best and most versatile land, although this will depend on the criteria included in the policy. Furthermore, the exact land take</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>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 overall are likely to be minor negative uncertain.</p> <p>Minor negative uncertain effects are considered likely policy M1 in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>Policy M1 supports the supply of sharp sand and gravel from existing permitted reserves. Therefore, the existing primary extraction site (Kingsham Quarry) will continue to operate, involving 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 Advisory Lorry Route. This could be further exacerbated by potential 'windfall' sites that are likely to be predominantly located in rural locations, thereby increasing the mileage of associated traffic movements and their associated emissions. However, the exact location of 'windfall' sites and levels of emissions will not be known until the planning application stage, and Part (c) of Policy M1 states that proposed new sites must be well-related to the Lorry Route Network, if transportation by rail or water is not practicable, therefore these effects are uncertain. Overall therefore, uncertain minor negative effects are likely overall for this SA objective.</p> <p>Policy M1 is considered likely to have uncertain minor negative effects in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water	?	R ?	<p>Policy M1 may lead to 'windfall' sites coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of this policy on water quality (surface or groundwater) or water use and efficiency as it will very much</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
quality and the function of the water environment.			depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage. Therefore, Policy M1 is likely to have uncertain effects for this SA objective. Effects of policy M1 on Regulating ecosystem services are uncertain at this stage.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	R +?	Policy M1 supports the supply of sharp sand and gravel from existing permitted reserves at Kingsham Quarry as well as any additional 'windfall' sites. Therefore, as the policy relates to a sand and gravel extraction site, the policy is not expected to have an effect on this SA objective, as sand and gravel workings are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. However, this also means that this site and any additional 'windfall' sites may have the potential to increase flood capacity and have minor positive effects on this SA objective although this is uncertain at this stage. Therefore, a minor positive uncertain effect is likely on this SA objective. Minor positive uncertain effects are considered likely for Policy M1 in relation to Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	Policy M1 supports the supply of sharp sand and gravel from existing permitted reserves. Therefore, the existing primary extraction site (Kingsham Quarry) will continue to operate, transporting extracted material by road. Additionally, Policy M1 may result in 'windfall' sites that are likely to be predominantly located in rural locations. The expansion and development of 'windfall' sites would increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. However, the exact location of 'windfall' sites and levels of emissions will not be known until the planning application stage, and Part (c) of Policy M1 states that if transportation by rail or water is not practicable then proposed new sites must be well-related to the Lorry Route Network, therefore these effects are uncertain. As such, an

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			uncertain minor negative effect is likely on this SA objective. Policy M1 is considered likely to have minor negative effects in relation to Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	+	R +	Policy M1 supports the supply of sharp sand and gravel from existing permitted reserves and potential 'windfall sites' which will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the maintenance of existing supplies. This therefore potentially reduces the need for additional importation of sharp sand and gravel into West Sussex. However, at this stage in the planning process it is not possible to determine the impacts of the policy on its ability to help reduce emissions of greenhouse gases as it depends on any measures implemented as part of the existing site and how successfully they have been implemented, which is not currently known. Additionally, it will depend on the 'windfall' site proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage. As such, an uncertain minor positive effect is likely overall. A minor positive uncertain effect is considered likely for Policy M1 in relation to Regulating ecosystem services

Policy M2 – Soft Sand

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Policy M2 supports both the maintenance of supplies from permitted reserves of soft sand, proposals for new sites in West Sussex beyond the SDNP, and the allowance of imports to meet requirements. This may therefore affect the local amenity and the wellbeing of residents, neighbouring land uses and visitors to West Sussex due to impacts such as dust, noise, vibration and traffic associated with mineral workings. There is potential however for land won soft sand to be substituted with marine won aggregate as in line with the steady increase of marine won aggregate outlined in the latest Local Aggregate Assessment. If this occurs, there would be a reduction in the number of minerals sites in operation in the county and national park.</p> <p>However, effects will be uncertain as the potential for effects will depend on the exact nature and design of any sites that come forward, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>Policy M2 could have minor negative effects on this SA objective as site allocations that could come forward under this policy or increases in imports could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor positive effect is also identified. It is unlikely that sites containing existing permitted reserves would affect this SA objective as they are unlikely to result in any additional negative impacts on recreation, or result in the potential to enhance further recreation opportunities. 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 any site allocations/areas</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>of search that come forward, which would not be known until the planning application stage.</p> <p>Policy M2 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Policy M2 is likely to have minor positive effects on this SA objective, as providing support for the maintenance of supplies from existing permitted reserves and new sites that could come forward is likely to have positive effects, as minerals are essential to sustain and enhance the vitality and viability of the local economy. However, these positive effects are uncertain as the supporting text to the policy notes that the strategy is to increasingly rely on imports to meet requirements which cannot be met from indigenous supplies due to the fact it is unlikely that a seven year landbank will be maintained during the plan period (as the soft sand resource is heavily constrained due its location within or adjacent to the South Downs National Park). Therefore, the local economy may not directly benefit from the extraction of material that is imported into West Sussex.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Policy M2 is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves and new sites that could come forward will not be classed as inappropriate development, as this will contribute to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as continued extraction from existing permitted reserves or from new permitted sites will not reduce the extraction of virgin materials. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>Policy M2 is likely to have minor positive effects on this SA objective as it seeks to prevent the development of additional sites or extensions to existing sites within the SDNP unless there are exceptional circumstances, thereby giving protection to key landscape designations in West Sussex. Furthermore, in the long term the restoration of sites containing permitted reserves and new sites that come forward could lead to positive effects for the landscape. However, minor negative effects are also likely as continued extraction in the short term/long term at existing sites and future sites could result in continued and new impacts on the landscape. This is particularly true if the marine won soft sand option is not taken forward. The effects would be uncertain as the potential for effects will depend on the exact nature and design of any sites that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are likely for this policy in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+/-?	P +/-? R +/-? C +/-?	<p>Policy M2 is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves and working of any new sites that may come forward may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. However, minor negative effects are also possible due to impacts existing and new sites and the import of soft sand supplies may have on designated sites, protected species or habitats. The policy is likely to have mixed, minor positive and minor negative effects on this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature and design of any sites that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>Policy M2 may lead to minor negative effects as the continued extraction of existing</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>permitted reserves and/or working of new permitted sites may uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. The 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 any sites that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor negative and minor positive uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>Policy M2 is likely to have minor negative effects on this SA objective, as the maintenance of supply from permitted reserves and/or working of permitted new sites could negatively affect the historic environment (e.g. archaeology), heritage assets and their setting as a result of associated mineral activities. However, sites may be able to preserve any uncovered findings and therefore benefit our understanding of the local archaeology or contribute towards the local vernacular. Furthermore, the policy seeks to prevent the development of additional sites or extensions to existing sites within the SDNP unless there are exceptional circumstances, thereby giving protection to key landscape designations and their historic character and setting in West Sussex. The 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 any sites that come forward, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely this policy in relation to Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most	-?	R -?	<p>It is unlikely that sites containing permitted reserves would affect this SA objective as they are unlikely to result in any additional negative impacts as the permitted reserves are located within the active sites and therefore any effects or potential enhancements on soil quality would have already been appropriately dealt during the determination of the</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
versatile land.			<p>relevant planning application, as would the aim of minimising the loss of best and most versatile land. However, via support to additional proposals in West Sussex (beyond the SDNP), this policy may result in the loss of best and most versatile land. However, the exact location and grade of agricultural land that might be lost 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.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	--?	R --?	<p>Policy M2 supports the supply of soft sand from permitted reserves and potential site proposals that may come forward. Therefore, this policy is likely to have negative impacts on this SA objective due to activities (e.g. lorry traffic) that may negatively affect air quality due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the Advisory Lorry Route, especially if transportation by rail or water is not viable. In addition, the supporting text to the policy notes that the strategy is to increasingly rely on imports to meet requirements which cannot be met from indigenous supplies due to the fact it is unlikely that a seven year landbank will be maintained during the plan period (as the soft sand resource is heavily constrained due its location within or adjacent to the South Downs National Park). Therefore, overall, a significant negative effect is anticipated. However, this is uncertain as soft sand supplies could potentially be replaced by marine won sand landed in West Sussex. This policy is considered likely to have significant negative uncertain effects in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the	?	R ?	<p>While Policy M2 seeks to maintain supplies from permitted reserves and may lead to sites coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of the policy on water quality (surface or groundwater) or water use and efficiency as it will very much depend on site proposals (location, design, method of</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
function of the water environment.			working etc.), which would be assessed at the planning application stage. Effects of this policy on Regulating ecosystem services are uncertain at this stage.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	Policy M2 relates to soft sand extraction and is therefore not expected to have an effect on this SA objective, as sand and gravel workings are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. However, this also means any sites may have the potential to increase flood capacity and have minor positive effects on this SA objective, although effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of any site that comes forward, which would not be known until the planning application stage. Therefore, a minor positive uncertain effect is likely on this SA objective. Minor positive uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	--	R --	Policy M2 supports the supply of soft sand from permitted reserves and potential sites that may come forward. Therefore, existing primary extraction sites will continue to operate, transporting extracted material by road, and any sites that come forward will be likely to increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. Furthermore, the increased dependence on imports to meet requirements which cannot be met from indigenous supplies is likely to result in increases in lorry traffic transporting material into West Sussex by road. Therefore, overall, a significant negative effect is anticipated. However, this is uncertain as soft sand supplies could potentially be replaced by marine won sand landed in West Sussex. This policy is considered likely to have significant negative effects in relation to Regulating ecosystem services.
14. To reduce the emissions of	+/--	R +/-	Policy M2 supports the supply of soft sand from permitted reserves and potential site allocations and/or areas of search that may come forward, which will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
greenhouse gases.			<p>maintenance of existing supplies. In addition, if viable, the policy encourages the transportation of minerals by rail or water for new proposals, which would reduce greenhouse gases if road transport was reduced. However, the increased dependence on imports to meet requirements which cannot be met from indigenous supplies is likely to result in increases in lorry traffic transporting material into West Sussex by road. Therefore, overall significant negative effects are also expected due to increases in the emission of greenhouse gases. However, at this stage in the planning process it is not possible to determine the impacts of the policy on its ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage. In addition, soft sand supplies could potentially be replaced by marine won sand landed in West Sussex.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>

Policy M3 – Silica Sand

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Policy M3 is likely to have minor negative effects on this SA objective due to sites that may be permitted resulting in negatives effects associated with mineral operations (e.g. dust, noise, and traffic levels), potentially affecting the health, well-being and amenity of people living and working in, and visiting West Sussex. Furthermore, the approach of not identifying sites provides less certainty to communities. Therefore, a minor negative effect is expected for this SA objective. The effects would be 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.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>Policy M3 may permit sites which could have potential negative effects on recreation opportunities (e.g. Public Rights of Way) by restricting access to or affecting the amenity of users. However, sites considered against this policy could provide positive effects through restoration opportunities for recreation. Therefore, Policy M3 is likely to have mixed, minor positive and minor negative effects on this SA objective. The effects would be 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.</p> <p>The policy could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Policy M3 provides support to unallocated 'windfall' sites where they accord with the criteria-based policy, thereby making a positive contribution to the local economy via new jobs that may be created. Additionally, the policy states that sites which require significant infrastructure will need to ensure that have permitted reserves of at least 15 years (opposed to the normal 10 years) to ensure the site and its associated plant are financially viable. Therefore a minor</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>positive effect is expected on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Policy M3 is likely to have minor positive effects on this SA objective as unallocated silica sand sites permitted under this policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as sites permitted under a criteria-based policy will not reduce the extraction of virgin materials. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/--?	C +/--?	<p>Policy M3 could potentially lead to significant negative effects for landscape character, as unallocated sites are likely to be located within the SDNP due to the location of the resource, thereby negatively impacting on this nationally important landscape designation. However, due to the location of the resource in the SDNP, the exceptional circumstances and public interest tests as set out in paragraph 116 of the NPPF would have to be applied to any applications that came forward for development. Sites may also have minor positive effects in the long term as the restoration of sites could lead to positive effects for the landscape. Therefore, this policy is likely to have mixed, minor positive and significant negative effects on this SA objective. 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.</p> <p>Mixed, minor positive and significant negative uncertain effects are considered likely for this</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			policy in relation to Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>Policy M3 could potentially lead to negative effects for biodiversity, as proposals for unallocated sites could have potential impacts on designated sites, protected species or habitats. Therefore, a minor negative effect is expected for this SA objective. The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>Policy M3 may lead to minor negative effects as proposals for unallocated sites may uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, a mixed minor negative and positive effect is expected for this SA objective. 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.</p> <p>Mixed minor positive and negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>Policy M3 provides support to the development of unallocated sites via a criteria-based policy. Sites permitted by the policy may be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the proposed 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. Therefore, the policy is likely to have uncertain, mixed minor positive/minor negative effects on this SA objective. Also, the effects would be uncertain as the potential for effects will depend on the exact nature and design, and</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			location of sites, which will not be known until the planning application stage. Mixed, significant positive and minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	Policy M3 with its criteria-based approach is likely to permit sites that may result in the loss of best and most versatile land, although this will depend on the criteria included in the policy. Furthermore, the exact land take and grade of agricultural land quality, 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. Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	Unallocated silica sand sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated traffic movements and their associated emissions. Therefore, this policy is likely to have minor negative effects on this SA objective. However, the exact location of proposals and levels of emissions will not be known until the planning application stage, and the policy states that the proposal needs to be well connected to the Lorry Route Network therefore these effects are uncertain. Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the	?	R ?	While Policy M3 with a criteria-based approach may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of this policy on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
function of the water environment.			Effects of this policy on Regulating ecosystem services are uncertain at this stage.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	<p>Policy M3 could result in extraction of new silica sand sites. Therefore, , the policy is not expected to have an effect on this SA objective, as sand and gravel workings (including silica sand) are classed as water-compatible development and are potentially suitable for all flood zones including 3b, the functional floodplain. However, this also means that any silica sand sites that come forward may have the potential to increase flood capacity and have minor positive effects on this SA objective, although effects would be uncertain as the potential for effects will depend on the exact nature and design, and location of the sites, which would not be known until the planning application stage. Therefore, a minor positive uncertain affect is likely on this SA objective.</p> <p>Minor positive uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-	R -	<p>Proposals for new silica sand sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated lorry traffic movements as rail and water modes of transportation are unlikely to be viable. Therefore, this policy is likely to have minor negative effects on this SA objective. However, the exact location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage, and the policy states that the proposal needs to be well connected to the Lorry Route Network therefore these effects are uncertain.</p> <p>This policy is considered likely to have minor negative uncertain effects in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of	+	R +	<p>Policy M3 will have minor positive effects on reducing the emission of greenhouse gases as it encourages the use of rail and water transportation where viable and supports new sites that will work local silica sand, potentially reducing the need for the importation of silica sand into West Sussex. However, to what degree this will reduce the need for imported material is uncertain.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
greenhouse gases.			<p>Furthermore, at this stage in the planning process it is not possible to determine the impacts of policy options on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor positive uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>

Policy M4 – Chalk

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Policy M4 allows proposals for chalk sites to be assessed against a criteria-based policy. The approval of new chalk sites and extensions to sites could affect the local amenity and the wellbeing of the local people in the short term through negative visual effects as well as increased noise, dust and traffic (especially with HGVs) derived from mineral activities. New sites could potentially mean new communities, neighbouring land uses and visitors to West Sussex are negatively affected. Extensions would mean that existing communities, neighbouring land uses and visitors to West Sussex would continue to be subjected to possible negative effects. As such, a minor negative effect is identified for this SA objective. However, effects will be uncertain as the potential for effects will depend on mitigation measures already provided at existing sites and the exact nature and design of the new sites, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way	+/-?	C +/-?	<p>Policy M4 could have minor negative effect on this SA objective as sites and extensions that could come forward under this policy could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of sites and so a minor positive effect is also identified. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
(PROW).			until the planning application stage. Policy M4 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	Policy M4 provides support to new sites, thereby making a positive contribution to the local economy via new jobs and/or continuing to support existing jobs, albeit this is only likely to be small due to the small-scale nature of new sites that could be permitted. Therefore, minor positive effects are expected on this SA objective. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	Policy M4 is likely to have minor positive effects on this SA objective as sites permitted under this policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as permitted sites will not reduce the extraction of virgin materials. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local	+/-?	C +/-?	Policy M4 is likely to have minor positive effects on this SA objective as in the long term the restoration of potential chalk sites and extensions to sites could lead to positive effects for the landscape via the restoration of sites. Furthermore,

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
distinctiveness and landscape character in West Sussex.			<p>preference would be given to sites outside of the South Downs National Park. However, minor negative effects are also expected as sites to come forward under this criteria-based policy could result in landscape impacts in the short/long term. The effects would be 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.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>Policy M4 could potentially lead to minor negative effects for biodiversity, as proposals for potential chalk sites and extensions to sites could have potential impacts on designated sites, protected species or habitats. Therefore, minor negative effects are expected for this SA objective. The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>Policy M4 could potentially lead to minor negative effects for geodiversity, as proposals for potential sites and extensions to sites could lead to potential impacts due to the potential to uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, mixed minor negative and positive effects are expected for this SA objective. 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			known until the planning application stage. Mixed minor positive and negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	++/-?	C ++/-?	Policy M4 provides support to the development of new sites. Sites permitted by this policy could help conserve the historic environment in West Sussex and maintain its local distinctiveness, as the chalk worked in the sites could be used as restorative and conservation material (for example in the crypt of Chichester Cathedral), thereby contributing to conserving and enhancing West Sussex's historic environment. Sites permitted by the policy may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the 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. Therefore, the policy is likely to have uncertain, mixed significant positive/minor negative effects on this SA objective. 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. Mixed, significant positive and minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	The exact land take and location of sites, that could come forward under Policy M4 , and whether loss of high quality agricultural land or 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

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			negative uncertain. Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	Policy M4 may potentially result in new sites coming forward. The working of these sites will result in traffic movements and their associated emissions. Therefore, minor negative effects are likely for this SA objective. However, the policy states that preference would be given to sites/extensions close to the Advisory Lorry Route, and also levels of emissions will not be known until the planning application stage, therefore these effects are uncertain. Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	Policy M4 may lead to sites coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of this policy on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage. Effects of this policy on Regulating ecosystem services are uncertain at this stage.
12. To reduce vulnerability to flooding, in particular preventing inappropriate	0?	R 0?	Policy M4 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 chalk sites are unlikely to be located in (due to the nature of the geological resource). However, the effects would be uncertain as

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
development in the floodplain.			<p>the potential for effects will depend on the exact nature and design, and location of the chalk sites, which would not be known until the planning application stage.</p> <p>This policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	<p>Policy M4 may potentially result in new sites coming forward. The working of these sites would increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. This is unlikely to change due to the high capital costs of rail infrastructure. Therefore, minor negative effects are likely for this SA objective. However, the policy states that preference would be given to sites/extensions close to the Advisory Lorry Route, and routing and traffic movements will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+?	R +?	<p>Policy M4 may potentially result in new sites coming forward. This will therefore have minor positive effects on reducing the emission of greenhouse gases as they support the supply of chalk from within West Sussex. This therefore potentially reduces the need for additional importation into West Sussex. However, to what degree this will reduce the need for imported material is uncertain. Furthermore, at this stage in the planning process it is not possible to determine the impacts of the policy on their ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor positive uncertain effects are considered likely for this policy in relation to</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Regulating ecosystem services.

Policy M5 – Clay

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Clay sites, due to their methods of extraction are typically less intensive than other minerals worked in West Sussex. However, the associated works where clay is used to make brick, may be visually intrusive and operation of the plant and distribution of the finished products can cause increases in noise and traffic. Therefore, overall the effects on health, wellbeing and amenity are likely to be minor negative Policy M5. The effects would be uncertain as the potential for effects will depend on the exact nature, design and operation of the sites, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>Policy M5 could have a minor negative effect on this SA objective as allocated sites and extensions to existing sites that could come forward under this policy could impact upon the amenity of users of PROW or others users of the countryside in the area. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor positive effect is also identified. Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. However, 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.</p> <p>Policy M5 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Policy M5 provides support to new sites, thereby making a positive contribution to the local economy via new jobs. Therefore, minor positive effects are expected on this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Policy M5 is likely to have a minor positive effect on this SA objective as sites permitted under this policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as permitted clay sites will not reduce the extraction of virgin materials. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>Policy M5 is likely to have minor positive effects on this SA objective as in the long term the restoration of potential extensions to existing sites could lead to positive effects for the landscape via the restoration of sites. However, minor negative effects are also expected in the short term as new extensions to existing sites could result in landscape impacts in the shorter term. Part c of the policy states that proposals must be located outside of the AONB and South Downs National Park so these designations consisting of areas of high landscape value are likely to be protected from clay workings. Therefore, mixed minor positive and negative effects are expected for this objective. The effects would be 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.</p> <p>Mixed minor positive and minor negative effects are considered likely for this policy in relation to Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>Policy M5 could potentially lead to minor negative effects for biodiversity, as proposals for allocated sites, extensions to existing sites, or additional sites could have potential impacts on designated sites, protected species or habitats. Therefore, minor negative effects are expected for this SA objective. The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>Policy M5 could potentially lead to minor negative effects for geodiversity, as proposals for allocated sites and extensions to existing sites could lead to potential impacts due to the potential to uncover and harm geological interests. However, new brick clay sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, mixed minor negative and positive effects are expected for this SA objective. 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.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	++/-?	C ++/-?	<p>Policy M5 provides support to the development of brick clay sites and extensions to existing sites. Sites permitted by this policy could help conserve the historic environment in West Sussex and maintain its local distinctiveness, as they may work clay (e.g. Gault Formation) which is used in products such as hand-made bricks which have aesthetic and restoration uses, thereby contributing to conserving and enhancing West Sussex's historic environment. Sites permitted by this policy may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the policy may also have minor negative effects on this SA objective, as some sites may involve activities that</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>could negatively affect the historic environment (e.g. archaeology), heritage assets and their setting due to transport, noise or vibration, or extraction methods. Therefore, the policy is likely to have uncertain, mixed significant positive/minor negative effects on this SA objective. 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.</p> <p>Mixed, significant positive and minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	<p>The exact land take and location of brick clay sites that could come forward under Policy M5 and whether there could be loss of high quality agricultural land or improvements to soil quality through site restoration, will not be known until the planning application stage. Therefore effects on this SA Objective are likely to be minor negative uncertain.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>Policy M5 may potentially result in extensions to existing sites coming forward. The working of these sites will result in traffic movements with associated emissions over reasonable distances, as it is viable to transport clay 25-30 miles. Therefore, minor negative effects are likely for this SA objective. However, the policy requires that sites should be well related to the Advisory Lorry Route and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Policy M5 is considered likely to have minor negative uncertain effects in relation to Regulating ecosystem services.</p>
11. To protect and, where possible,	?	R ?	<p>Policy M5 may lead to sites coming forward which may affect the water resources, water quality or the function of the water environment in West Sussex,</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
enhance water resources, water quality and the function of the water environment.			<p>at this stage in the planning process it is not possible to determine the impacts of the policy such as this on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of this policy on Regulating ecosystem services are uncertain at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>Policy M5 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 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.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	<p>Policy M5 may potentially result in extensions to existing sites coming forward. The working of these sites would increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. This is unlikely to change due to the high capital costs of rail infrastructure. Therefore, minor negative effects are likely for this SA objective. However, the policy requires that sites should be well located to the Advisory Lorry Route and routing and traffic movements will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Policy M5 is considered likely to have minor negative uncertain effects in relation to Regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
14. To reduce the emissions of greenhouse gases.	+/-?	R +/-?	<p>Policy M5 may potentially result in extensions to existing sites coming forward. This will therefore have minor positive effects on reducing the emission of greenhouse gases as it supports the supply of clay from within West Sussex. This potentially reduces the need for additional importation into West Sussex. However, minor negative effects are also expected as additional sites would lead to more vehicle movements as material is transported to the brickworks from the additional sites, thereby increasing emissions of greenhouse gases. Furthermore, at this stage in the planning process it is not possible to determine the impacts of this policy on its ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage. Therefore, mixed minor positive and minor negative uncertain effects are expected.</p> <p>Policy M5 is considered likely to have mixed minor positive and minor negative uncertain effects in relation to Regulating ecosystem services.</p>

Policy M6 – Building Stone

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Building stone sites are typically small scale operations and are less intensive than aggregates quarries. Therefore, effects 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, well-being and amenity of people living and working in, and visiting West Sussex are likely to be minor. Therefore, a minor negative effect is expected for 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 sites, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>Policy M6 may permit sites which could have both potential negative and positive effects on recreation opportunities (e.g. Public Rights of Way) by restricting access to or affecting the amenity of users. However, sites considered against this policy could provide positive effects through restoration opportunities for recreation. Therefore, this policy is likely to have mixed, minor positive and 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 sites, which would not be known until the planning application stage.</p> <p>The policy could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Policy M6 provides support to specific sites and extensions to existing sites where they accord with the criteria-based policy, thereby making a positive contribution to the local economy via new jobs/continued employment. Therefore a minor positive effect is expected on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Policy M6 is likely to have minor positive effects on this SA objective as building stone sites permitted under a criteria-based policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of mineral resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as sites permitted under a criteria-based policy will not reduce the extraction of virgin materials. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>Policy M6 could potentially lead to negative effects for landscape and landscape character, as new specific sites and/or extensions to existing sites could negatively impact on the landscape. However, the policy states that sites must be located outside the AONB and National Park unless there are exceptional circumstances, thereby giving protection to key landscape designations in West Sussex. Furthermore, the use of</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>natural stone within elements of the local built environment has helped define the special qualities of landscape designations. 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 building stones could protect and enhance the local landscape and setting of designations.</p> <p>Therefore, this policy is likely to have mixed, minor positive and minor negative effects on this SA objective. 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.</p> <p>Mixed, minor positive and minor negative uncertain effects are also considered likely for this policy in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>Policy M6 could potentially lead to negative effects for biodiversity, as proposals for specific sites and extensions to existing sites could have potential impacts on designated sites, protected species or habitats. Therefore, a minor negative effect is expected for this SA objective. The effects would be 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.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+/-?	C +/-?	<p>Policy M6 may lead to minor negative effects as proposals for specific sites and extensions to existing sites may uncover and harm geological interests. However, sites may also potentially contribute to geodiversity by preserving and conserving geological features or making them visible and available for learning opportunities. Therefore, a mixed minor negative and positive effect is expected for this SA objective. However,</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>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.</p> <p>Mixed minor positive and negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	++/-?	C ++/-?	<p>Policy M6 provides support to the development of specific sites and extensions to existing sites. These sites could help conserve the historic environment in West Sussex and maintain its local distinctiveness, in some cases conserving buildings using similar, local stone, thereby conserving and enhancing West Sussex's historic environment. Sites permitted by the policy may also be able to preserve findings and therefore benefit our understanding of the local archaeology. However, the 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. Therefore, the policy is likely to have uncertain, mixed significant positive/minor negative effects on this SA objective. 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.</p> <p>Mixed, significant positive and minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	<p>Policy M6 is likely to permit generally smaller sites compared to aggregate sites but nonetheless may still result in the loss of best and most versatile land. The exact land take and location, and whether loss of high quality agricultural land or improvements to soil quality through site restoration are possible, will not be known until the planning application</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>stage, therefore effects on this SA Objective are likely to be minor negative uncertain.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+/-?	R +/-?	<p>Building stone sites that are specific sites or extensions to existing sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated traffic movements and their associated emissions. However, Policy M6 requires sites to be well located to the Lorry Route Network. Furthermore, the levels of traffic associated with building stone sites is less than other mineral workings due to the lower annual tonnages worked, which means the level of emissions would be lower than for other types of mineral extraction sites. Therefore, this policy is likely to have mixed minor positive, minor negative effects on this SA objective. The exact location of proposals and levels of emissions will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Mixed, minor positive and minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	<p>While Policy M6 may affect the water resources, water quality or the function of the water environment in West Sussex, at this stage in the planning process it is not possible to determine the impacts of this policy on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the building stone site proposal (location, design, method of working etc.), which would be assessed at the planning application stage.</p> <p>Effects of this policy on Regulating ecosystem services are uncertain at this stage.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>Policy M6 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 building stone sites are unlikely to be located in. However, this would not be known until the planning application stage.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+/-?	R +/-?	<p>Building stone sites that are specific sites or extensions to existing sites are likely to be predominantly located in rural locations, thereby increasing the mileage of associated lorry traffic movements. However, the policy requires sites to be well located to the Advisory Lorry Route. Furthermore the levels of lorry traffic associated with building stone sites are less than other mineral workings due to the lower annual tonnages worked. Therefore, this policy is likely to have mixed minor positive, minor negative effects on this SA objective. 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.</p> <p>Mixed, minor positive and minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+?	R +?	<p>Policy M6 will have minor positive effects on reducing the emission of greenhouse gases as it supports specific sites or extensions to existing sites that will work local building stone to maintain local distinctiveness and the repair of heritage assets. This therefore supports local stone for local need, potentially reducing the need for the importation of stone into West Sussex. However, to what degree this will reduce the need for imported stone is uncertain. Furthermore, at this stage in the planning process it is not possible to determine the impacts of this policy on its ability to help reduce emissions of greenhouse gases as it will depend on</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor positive uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>

Policy M7a – Hydrocarbon development not involving hydraulic fracturing

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Policy M7a provides specific criteria against which proposals for exploration and appraisal for oil and gas would be determined. Many of the potential impacts on the local amenity, health and wellbeing of local people (e.g. dust, pollution) would not be that dissimilar to most mineral operations. Also, while operations are likely to be intensive, they are likely to be short term, especially during exploration stages. New developments could potentially mean new communities, neighbouring land uses and visitors to West Sussex are negatively affected. Criterion a (iii) requires proposals for exploration and appraisal for oil and gas that may have unacceptable adverse impacts on local communities to be mitigated and or minimised to an acceptable level. As such, minor negative effects are identified for this SA objective. However, effects will be uncertain as the potential for effects will depend on the exact nature, design and location of the proposals, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-?	C -?	<p>Policy M7a could have minor negative effects on this SA objective as developments that could come forward under this policy could impact upon the amenity of users of PROW or others users of the countryside in the area. Developments are also unlikely to protect or enhance recreation opportunities, particularly due to their small scale and more temporary/short term nature. Criterion a (iii) requires proposals for exploration and appraisal for oil and gas that may have unacceptable adverse impacts on the natural environment and or/ be visually intrusive to be mitigated and or minimised to an acceptable level. However, effects will be uncertain as the potential for effects will depend on the exact nature, design and location of the proposals, which would not be</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			known until the planning application stage. Policy M7a could have a minor negative but uncertain effect on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	Oil and gas play an important role in the UK economy and further exploitation will help to ensure a secure and diverse supply chain. Policy M7a provides some support to proposals for exploration and appraisal for oil and gas through the provision of specific criteria against which such proposals would be determined, thereby potentially making a positive contribution to the local economy via new jobs and locally based skills. Such development is unlikely to affect tourists' decisions to visit relevant areas. Therefore minor positive effects are expected on this SA objective. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	Policy M7a is likely to have a minor positive effect on this SA objective as developments permitted under the policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as permitted developments will not reduce the extraction of finite hydrocarbons. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the	+/-?	C +/-?	Policy M7a is likely to have minor negative effects for landscape and landscape character, as proposals for exploration and appraisal for oil and gas could result

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
landscape, local distinctiveness and landscape character in West Sussex.			<p>in landscape impacts. However, it is likely that sites will be relatively contained and small scale as criterion a (i) notes that where major development sites are potentially proposed in designated areas (e.g. SDNP and AONBs), and do not include hydraulic fracturing, the exceptional circumstances and public interest tests would have to be met. Furthermore, criterion a (iii) requires proposals for exploration and appraisal for oil and gas that may have unacceptable adverse impacts on the natural and built environment and or/ be visually intrusive to be mitigated and or minimised to an acceptable level.</p> <p>The policy could also result in minor positive effects as in the long term as the restoration of potential developments could lead to positive effects for the landscape. Therefore, this policy is likely to have mixed minor positive, minor negative effects on this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the developments, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for Policy M7a in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	<p>P -?</p> <p>R -?</p> <p>C -?</p>	<p>Policy M7a could potentially lead to minor negative effects for biodiversity, as developments could have potential impacts not too dissimilar to most mineral operations (e.g. transport, noise, lighting, dust, and pollution) which could negatively affect designated sites, protected species or habitats. However, criterion a (iii) requires proposals for exploration and appraisal for oil and gas that may have unacceptable adverse impacts on the natural environment to be mitigated and or minimised to an acceptable level. Furthermore, development proposals from any phase that are located near designated habitats are to show that the values of these assets are not compromised (criterion c) Therefore, minor negative effects are expected for this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the proposed developments, which would not be known until the planning application stage.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Minor negative uncertain effects are considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.
7. To protect and conserve geodiversity.	-?	C -?	<p>Policy M7a could potentially lead to minor negative effects for geodiversity, as proposals for exploration and appraisal for oil and gas could lead to potential impacts due to the potential to uncover and harm geological interests, and there is unlikely to be the potential to contribute to geodiversity by conserving geological features. Therefore, minor negative effects are expected for this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>Policy M7a may lead to minor negative effects on the historic environment (e.g. archaeology), heritage assets and their setting as operations associated with proposals for exploration and appraisal can be intensive, due to the methods of working (i.e. drilling and traffic volumes). There is also unlikely to be the potential for developments to uncover and help preserve historic features or findings thereby not being able to contribute towards conserving and enhancing West Sussex's historic environment. Criterion a (iii) however, requires exploration and appraisal for oil and gas proposals that may have unacceptable adverse impacts on the built environment and or/ be visually intrusive to be mitigated and or minimised to an acceptable level. Therefore, minor negative effects are expected for this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	<p>The exact land take and location of developments that could come forward under Policy M7a, and whether loss of high quality agricultural land or 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.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	<p>Policy M7a could result in permission for developments that are likely to involve flaring of gas, and substantial amounts of transport movements due to the transportation of extracted oil and gas. This may lead to impacts on air quality. Criterion a (iii) however requires exploration and appraisal development proposals that may have unacceptable adverse impacts on air quality to be mitigated and or minimised to an acceptable level. Furthermore, criterion b (ii) requires that no adverse impacts arising from the transportation of oil/gas, or waste are to occur from proposals for oil and gas production. Therefore, minor negative effects are expected for this SA objective. However, the effects would be minor and uncertain as the potential for effects will depend on the exact nature, scale, design and location of the developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water	-?	R -?	<p>Policy M7a may lead to developments coming forward which may have a minor negative effect on the water resources, water quality or the function of the water environment in West Sussex. However, this effect is uncertain because at this stage in the planning process it is not possible to determine the impacts of these types of development on water quality (surface or groundwater) or water use and efficiency, as it will very much depend on the</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
environment.			<p>specific development proposal (location, design, method of working etc.) that comes forward and would be assessed at the planning application stage. During exploration and appraisal for oil and gas, criterion a (v), and during production, criterion b (iv) of Policy M7a states that proposals must ensure that no unacceptable impacts would arise from on-site storage or treatment of hazardous substances and/or contaminated fluids above or below ground. In addition, there are other policy safeguards in relation to protection of groundwater that must be met, such as the Infrastructure Act 2015.</p> <p>Effects of this policy on Regulating ecosystem services are likely to have a minor negative uncertain effect at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>Policy M7a 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 (as stated in the Planning Practice Guidance: Flood Risk and Coastal Change), which means they are potentially compatible with all flood zones except for Flood Zone 3b, which unconventional and conventional oil and gas development is unlikely to be located in. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the developments, which would not be known until the planning application stage.</p> <p>Policy M7a is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the	-?	R -?	<p>Policy M7a may potentially result in new developments coming forward, which are likely to have minor negative effects on this SA objective. As the levels of lorry traffic associated with developments can be substantial due to the transportation of extracted oil and gas. Criterion a (v) requires that no adverse impacts arising from the transportation of oil/gas, or waste are to occur from the proposals for the exploration and appraisal for oil and gas. However, the location of proposals, traffic levels, lorry routing and access arrangements</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
Lorry Route Network.			<p>will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	-?	R -?	<p>Policy M7a may potentially result in new developments coming forward, which are likely to have minor negative effects on this SA objective. As developments may potentially involve substantial amounts of lorry traffic and the location of developments within West Sussex are unlikely to reduce transport distances. Also extracted oil and gas is unlikely to predominantly serve local markets unlike other minerals (e.g. consolidated bedrock and sharp sand and gravel), thereby requiring the continuation of imports. This is therefore unlikely to reduce the emissions of greenhouse gases. Furthermore, the operation of developments, especially during exploration can involve flaring. However, at this stage in the planning process it is not possible to determine the impacts of this policy on its ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for Policy M7a in relation to Regulating ecosystem services.</p>

Policy M7b – Hydrocarbon development involving hydraulic fracturing

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>Policy M7b provides specific criteria against which proposals for exploration and appraisal for oil and gas would be determined. Many of the potential impacts on the local amenity, health and wellbeing of local people (e.g. dust, pollution) would not be that dissimilar to most mineral operations. Also, while operations are likely to be intensive, they are likely to be short term, especially during exploration stages. New developments could potentially mean new communities, neighbouring land uses and visitors to West Sussex are negatively affected. Criterion a (iii) however, requires exploration and appraisal proposals that may have unacceptable adverse impacts on local communities to be mitigated and or minimised to an acceptable level.</p> <p>As such, minor negative effects are identified for this SA objective. However, effects will be uncertain as the potential for effects will depend on the exact nature, design and location of the proposals, which would not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-?	C -?	<p>Policy M7b could have minor negative effects on this SA objective as developments that could come forward under this policy could impact upon the amenity of users of PROW or others users of the countryside in the area. Developments are also unlikely to protect or enhance recreation opportunities, particularly due to their small scale and more temporary/short term nature. Criterion a (iii) requires exploration and appraisal proposals for oil and gas that may have unacceptable adverse impacts on the natural environment and or/ be visually intrusive to be mitigated and or minimised to an acceptable level. However, effects will be uncertain as the potential for effects will depend on the exact nature, design and location of the proposals, which would not be known</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>until the planning application stage.</p> <p>Policy M7b could have a minor negative but uncertain effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Oil and gas play an important role in the UK economy and further exploitation will help to ensure a secure and diverse supply chain. Policy M7b provides some support to proposals for exploration and appraisal for oil and gas through the provision of specific criteria against which such proposals would be determined, thereby potentially making a positive contribution to the local economy via new jobs and locally based skills. Such development is unlikely to affect tourists' decisions to visit relevant areas. Therefore minor positive effects are expected on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Policy M7b is likely to have a minor positive effect on this SA objective as developments permitted under the policy will not be classed as inappropriate development, as they are contributing to the extraction and supply of resources for the needs of society, not limiting the ability to extract resources. However, minor negative effects are also likely as permitted developments will not reduce the extraction of finite hydrocarbons. Therefore, the policy is likely to have mixed, minor positive and minor negative effects on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the	+/-?	C +/-?	<p>Policy M7b is likely to have minor negative effects for landscape and landscape character, as proposals for exploration and appraisal for oil and gas could result</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
landscape, local distinctiveness and landscape character in West Sussex.			<p>in landscape impacts. However, for proposals involving hydraulic fracturing covered by this policy, any surface development would not be allowed in SDNP or the AONBs, which should help to protect the designated landscapes in West Sussex. Criterion a (i) protects designated landscapes through preventing any development at surface level during the exploration and appraisal phase to be located within the South Down National Park, Chichester Harbour AONB, or High Weald AONB. Furthermore, criterion a (iii) requires exploration and appraisal proposals that may have unacceptable adverse impacts on the natural environment and or/ be visually intrusive to be mitigated and or minimised to an acceptable level.</p> <p>The policy could also result in minor positive effects as in the long term the restoration of potential developments could lead to positive effects for the landscape via restoration. Therefore, this policy is likely to have mixed minor positive, minor negative effects on this SA objective. The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the developments, which would not be known until the planning application stage.</p> <p>Mixed minor positive and minor negative uncertain effects are considered likely for Policy M7b in relation to Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	<p>P -?</p> <p>R -?</p> <p>C -?</p>	<p>Policy M7b could potentially lead to minor negative effects for biodiversity, as developments could have potential impacts not too dissimilar to most mineral operations (e.g. transport, noise, lighting, dust, and pollution) which could negatively affect designated sites, protected species or habitats. However, criterion a (iii) requires exploration and appraisal proposals that may have unacceptable adverse impacts on the natural environment to be mitigated and or minimised to an acceptable level. Furthermore, development proposals from any phase that are located near designated habitats are to show that the values of these assets are not compromised (criterion c). Therefore, minor negative effects are expected for this SA objective. The effects would be uncertain as</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>the potential for effects will depend on the exact nature, design and location of the proposed developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	-?	C -?	<p>Policy M7b could potentially lead to minor negative effects for geodiversity, as proposals for exploration and appraisal for oil and gas could lead to potential impacts due to the potential to uncover and harm geological interests, and there is unlikely to be the potential to contribute to geodiversity by conserving geological features. Therefore, minor negative effects are expected for this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the developments, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>Policy M7b may lead to minor negative effects on the historic environment (e.g. archaeology), heritage assets and their setting as operations associated with proposals for exploration and appraisal can be intensive, due to the methods of working (i.e. drilling, water usage at high pressure, traffic volumes). There is also unlikely to be the potential for developments to uncover and help preserve historic features or findings thereby not being able to contribute towards conserving and enhancing West Sussex's historic environment. Criterion a(iii) however, requires exploration and appraisal development proposals that may have unacceptable adverse impacts on the built environment and or/ be visually intrusive to be mitigated and or minimised to an acceptable level. Therefore, minor negative effects are expected for this SA objective. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			developments, which would not be known until the planning application stage. Minor negative uncertain effects are considered likely for this policy in relation to Cultural ecosystem services
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	R -?	The exact land take and location of developments that could come forward under Policy M7b , and whether loss of high quality agricultural land or 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. Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	Policy M7b could result in permission for developments that are likely to involve flaring of gas, and substantial amounts of transport movements due to the transport of water used in operations and the transportation of extracted oil and gas. This may lead to impacts on air quality. Criterion a (iii) however requires exploration and appraisal proposals that may have unacceptable adverse impacts on air quality to be mitigated and or minimised to an acceptable level. In addition, the policy also encourages sites to be accessible to target reservoirs, thereby reducing transportation that contributes to air pollution (criterion a (ii)). Furthermore, criterion b (ii) outlines that no adverse impacts arising from the transportation of oil/gas, or waste are to occur from the development. Therefore, minor negative effects are expected for this SA objective. However, the effects would be minor and uncertain as the potential for effects will depend on the exact nature, scale, design and location of the developments, which would not be known until the planning application stage. Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	-?	R -?	<p>Policy M7b may lead to developments coming forward which may have a minor negative effect on the water resources, water quality or the function of the water environment in West Sussex. However, within the policy, there is a presumption against hydrocarbon development involving hydraulic fracturing in Groundwater Source Protection Zones 1, 2 and 3 unless it is demonstrated that there will be no unacceptable impacts on groundwater as specified in criterion 'd'. Furthermore, during the exploration and appraisal phase, criterion a (v), and production phase, criterion b (iv), proposals must ensure that no unacceptable impacts would arise from on-site storage or treatment of hazardous substances and/or contaminated fluids below ground. However, this effect is uncertain because at this stage in the planning process it is not possible to determine the impacts of these types of development on water quality (surface or groundwater) or water use and efficiency, as it will very much depend on the specific development proposal (location, design, method of working etc.) that comes forward and would be assessed at the planning application stage. In addition, there are other policy safeguards in relation to protection of groundwater that must be met, such as the Infrastructure Act 2015.</p> <p>Effects of this policy on Regulating ecosystem services are likely to have a minor negative uncertain effect at this stage.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?	R 0?	<p>Policy M7b 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 (as stated in the Planning Practice Guidance: Flood Risk and Coastal Change), which means they are potentially compatible with all flood zones except for Flood Zone 3b, which unconventional and conventional oil and gas development is unlikely to be located in. However, the effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the developments, which would not be known until the planning application stage.</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Policy M7b is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	<p>Policy M7b may potentially result in new developments coming forward, which are likely to have minor negative effects on this SA objective. As the levels of lorry traffic associated with developments can be substantial due to the transport of water used in operations and the transportation of extracted oil and gas. Criterion a (iii) however requires exploration and appraisal proposals that may have unacceptable adverse impacts on air quality to be mitigated and or minimised to an acceptable level. In addition, the policy also encourages sites to be accessible to target reservoirs, thereby reducing transportation that contributes to air pollution (criterion a (ii)). Also criterion a (iii) requires that no adverse impacts arising from the transportation of oil/gas, or waste are to occur from the development. However, the location of proposals, traffic levels, lorry routing and access arrangements will not be known until the planning application stage, therefore these effects are uncertain.</p> <p>Minor negative uncertain effects are considered likely for this policy in relation to Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	-?	R -?	<p>Policy M7b may potentially result in new developments coming forward, which are likely to have minor negative effects on this SA objective. As developments may potentially involve substantial amounts of lorry traffic and the location of developments within West Sussex are unlikely to reduce transport distances. Also extracted oil and gas is unlikely to predominantly serve local markets unlike other minerals (e.g. consolidated bedrock and sharp sand and gravel), thereby requiring the continuation of imports. This is therefore unlikely to reduce the emissions of greenhouse gases. Furthermore, the operation of developments, especially during exploration can involve flaring. Criterion a (iii) however requires exploration and appraisal proposals that may have unacceptable adverse impacts on air quality to be mitigated and or minimised</p>

SA Objective and Sub Questions	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>to an acceptable level. In addition, the policy also encourages sites to be accessible to target reservoirs, thereby reducing transportation that emits greenhouse gases (criterion a (ii)). However, at this stage in the planning process it is not possible to determine the impacts of this policy on its ability to help reduce emissions of greenhouse gases as it will depend on the proposals that come forward and how successfully they are implemented, which would not be known until the planning application stage.</p> <p>Minor negative uncertain effects are considered likely for Policy M7b in relation to Regulating ecosystem services.</p>

Policy M8 - Mineral processing and ancillary activities at mineral sites

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	N/A	<p>The provision of secondary mineral processing and/or ancillary activities through this policy is likely to have a minor negative effect as these sort of activities could lead to minor negative effects on the amenity of residents, land uses and visitors to West Sussex. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-?	C -?	<p>The provision of secondary mineral processing and/or ancillary activities through this policy is likely to have a minor negative effect as sites permitted via this policy could lead to minor negative effects on the amenity restoration users. Furthermore, the key challenge this policy aims to address includes the protection of public amenity; however, the policy does not specifically include any measures that would protect public amenity. Therefore, minor negative effects are expected for this SA objective. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Secondary mineral processing and/or ancillary activities permitted through this policy are likely to have minor positive effects on this SA objective, as minerals are essential to support sustainable economic growth. These facilities and activities 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>to provide the infrastructure, buildings, energy and goods that West Sussex and the country need. Therefore a minor positive effect is expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+/-	S -	<p>Secondary mineral processing and/or ancillary activities permitted through this policy will not be a form of inappropriate development as they will contribute to the supply of minerals and as such a minor positive effect is identified. However, the policy indirectly supports the extraction and processing of primary minerals to supply ancillary activities and so a minor negative effect is also identified resulting in mixed affects overall on this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	-?	C -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have adverse impacts on the landscape due to the presence of the machinery and structures used in minerals processing. The supporting text states that proposals will be considered against the development management policies which include policies seeking to avoid harm to landscape character. Therefore, minor negative effects are expected for this SA objective. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	P -? R -? C -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have adverse impacts on biodiversity, including natural habitats and protected species. Although, these are likely to be minor as the policy requires proposals to demonstrate that the proposed operations are linked to the existing operations on site, therefore not a new site. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>The development of secondary mineral processing and/or ancillary activities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have an effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have adverse impacts on the historic environment. Although, these are likely to be minor as the policy requires proposals to demonstrate that the proposed operations are linked to the existing operations on site, therefore not a new site. However, the effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best	0	R 0	<p>The development of secondary mineral processing and/or ancillary activities is unlikely to affect this SA objective. Therefore, no effects are expected for this</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
and most versatile land.			SA objective. The policy is considered unlikely to have an effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	R -?	The development of secondary mineral processing and/or ancillary activities via this policy is likely to have minor negative effects on this SA objective, as the facilities and transport involved will likely result in increases in air pollution. The effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage. The policy is considered likely to have minor negative effects on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	R ?	Secondary process and/or ancillary activity proposals brought forward by this policy may affect the water resources, water quality or the function of the water environment in West Sussex. At this stage in the planning process however, it is not possible to determine the impacts of this policy on water quality (surface or groundwater) or water use and efficiency as it will very much depend on the site proposal (location, design, method of working etc.), which would be assessed at the planning application stage and so an uncertain effect is expected on this SA objective. The policy is considered likely to have uncertain effects on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	The development of secondary mineral processing and/or ancillary activities is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have an effect on Regulating ecosystem

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	-?	R -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have minor negative effects on this SA objective, as the activities will involve the movement of materials by road. The effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	-?	R -?	<p>The development of secondary mineral processing and/or ancillary activities via this policy is likely to have minor negative effects on this SA objective, as the facilities and transport involved will likely result in increases in air pollution and therefore greenhouse gases. The effects are uncertain as they will depend on the type, scale and location of the secondary processing/ancillary activities, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor negative effects on Regulating ecosystem services.</p>

Policy M9 – Safeguarding Minerals

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	N/A	<p>Mineral Safeguarding Areas supported by Policy M9 may potentially restrict non-mineral development taking place that could otherwise have a negative effect on the health, wellbeing and amenity of people. However, the Safeguarding Areas may lead to more mineral extraction 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.</p> <p>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 Safeguarding Areas, which will not be known until the planning application stage.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>Mineral Safeguarding Areas supported by Policy M9 may potentially restrict non-mineral developments that could otherwise have a negative effect on recreation (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) that could have a detrimental impact on recreation 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. 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 Safeguarding Areas, which will not be</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			known until the planning application stage. The policy could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	++/-	N/A	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 West Sussex. Policy M9 supports Mineral Safeguarding Areas, which should help safeguard mineral resources from sterilisation and may therefore have a positive effect on economic development related to minerals. However, as non-mineral developments may potentially be restricted within Mineral Safeguarding Areas, the proposed policy could also have negative effects on economic development, as Safeguarding Areas may reduce 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 significant positive and minor negative effects on this SA objective. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	S -	The policy is likely to have significant positive effects on this SA objective, as it 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 planning decisions. Policy M9 also safeguards existing mineral extraction sites therefore enabling the supply of aggregates.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>Mineral Safeguarding Areas supported by Policy M9 may have minor positive effects on landscape, as the potential restriction 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 extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) 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 be 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 Safeguarding Areas, which for some will not be known until the planning application stage.</p> <p>The policy could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P +? R +? C +?	<p>Mineral Safeguarding Areas supported by Policy M9 may have minor positive effects on biodiversity, as the potential restriction of non-mineral development in Safeguarding Areas that would prejudice mineral workings may prevent development that could harm biodiversity. Also, should areas within Safeguarding Areas be used for mineral extraction in the future, long-term biodiversity benefits could occur 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>effects will depend on the exact nature and design of proposals within Safeguarding Areas, which will not be known until the planning application stage.</p> <p>The policy is considered likely to have minor positive uncertain effects in relation to Provisioning, Regulatory and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	++?	C ++?	<p>Mineral Safeguarding Areas supported by Policy M9 should have significant positive effects with regard to the protection of geodiversity, as safeguarding minerals is likely to protect minerals that may be accessed for extraction helping to create geological exposures, and therefore may be preserved and be accessible for study and enjoyment in the future.</p> <p>The policy is considered likely to have significant positive uncertain effects in relation to Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	<p>Mineral Safeguarding Areas supported by Policy M9 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) that would have a detrimental impact on the historic environment. 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 Safeguarding Areas, which will not be known until the planning application stage.</p> <p>The policy could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	Soil/land quality is unlikely to be affected by Policy M9 , therefore no effect is expected for this SA objective. This policy is considered unlikely to have any effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	Air quality is unlikely to be affected by Policy M9 , therefore no effect is expected for this SA objective. This policy is considered unlikely to have any effect on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Water resources, water quality and the function of the water environment is unlikely to be affected by Policy M9 , therefore no effect is expected for this SA objective. This policy is considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Flooding is unlikely to be affected by Policy M9 , therefore no effect is expected for this SA objective. This policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry	+/-?	R +/-?	Mineral Safeguarding Areas supported by Policy M9 may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential 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) that could have a detrimental impact due to the adverse impacts of

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
Route Network.			<p>lorry traffic. Overall, a mixed minor positive/minor negative effect is likely 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 will not be known until the planning application stage.</p> <p>The policy could have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	RO	<p>Greenhouse gases are unlikely to be affected by the policy for Mineral Safeguarding Areas, therefore no effect is expected for this SA objective.</p> <p>This policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M10 – Safeguarding Minerals Infrastructure

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	N/A	<p>Policy M10 may potentially restrict non-mineral developments near to minerals infrastructure that could otherwise have a negative effect on the health, wellbeing and amenity of people and/or conflict with the existing minerals operations. However, safeguarding minerals infrastructure including the permanent wharves and railheads listed in criterion 'c' and the temporary wharves listed for minerals transportation purposes in criterion 'e' of the policy will ensure that 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 minerals infrastructure does not mean 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 other production infrastructure within Safeguarding Areas.</p> <p>Protection of health and wellbeing would be supported by all ecosystem services, but is unlikely to have a particular impact on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+/-?	C +/-?	<p>Policy M10 may potentially restrict non-mineral developments that could otherwise have a negative effect on access to the countryside, open spaces and Public Rights of Way. However, the policy will ensure that minerals infrastructure will continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on access to the countryside, open spaces and Public Rights of Way. It must be emphasised, however, that the process of safeguarding minerals infrastructure including the permanent wharves and railheads listed in criterion 'c' and the temporary wharves listed for minerals transportation purposes in criterion 'e' of the policy does not mean that production infrastructure 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>depend on the exact nature and design of other production infrastructure within Safeguarding Areas.</p> <p>Policy M10 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	++/-	N/A	<p>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 West Sussex. Safeguarding minerals infrastructure including the permanent wharves and railheads listed in criteria 'c' and temporary wharves listed for minerals transportation purpose in criterion 'e' of the policy 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 by safeguarding existing or planned sites for mineral infrastructure and production activities, the proposed policy could also have negative effects on employment opportunities and other parts of the economy such as house building and redevelopment (e.g. of wharf sites). It must be emphasised, however, that the process of safeguarding minerals infrastructure does not mean that non-mineral development cannot take place. Criterion 'a' in the policy does allow for alternative use proposals at the safeguarded wharves provided certain criteria are met. Therefore, overall Policy M10 is likely to have mixed significant positive/minor negative effects on this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate	++	S -	<p>Policy M10 is likely to have significant positive effects on this SA objective, as existing minerals infrastructure including the permanent wharves and railheads listed in criteria 'c'</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.			<p>and 'e' of the policy which are safeguarded will not be classed as inappropriate development, as they are contributing to the supply of mineral resources and products for the needs of society, not limiting the ability to extract or supply resources. Furthermore, criterion 'd' of the policy safeguards sites hosting temporary minerals infrastructure from other types of development for the duration of the site's temporary use. This is unless the non-minerals development use has wider social and/ or economic benefits.</p> <p>Conserving minerals infrastructure from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+/-?	C +/-?	<p>Policy M10 may have minor positive effects on landscape, as the potential restriction of incompatible development by safeguarding existing and planned infrastructure sites may prevent non-minerals development that could negatively impact on the landscape. However, safeguarding any existing railheads, wharves and other mineral related facilities such a concrete batching will ensure that other production infrastructure continues to operate unaffected by incompatible developments, which may therefore prolong existing impacts on landscape. It must be emphasised, however, that the process of safeguarding minerals infrastructure does not mean 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 other production infrastructure within Safeguarded Areas.</p> <p>Policy M10 could have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P +? R +?	<p>Policy M10 may have minor positive effects on biodiversity, as the potential restriction of incompatible development around minerals infrastructure may prevent development that could harm biodiversity. It must be emphasised, however, that the process of safeguarding minerals infrastructure does not mean that that non-mineral development</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
		C +?	cannot take place. However, any effects would be uncertain as the potential for effects will depend on the exact nature and design of other production infrastructure within Safeguarding Areas. Policy M10 is considered likely to have minor positive uncertain effects in relation to Provisioning, Regulatory and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C 0	Safeguarding any existing railheads, wharves and other mineral related infrastructure such a concrete batching is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective. Policy M10 is considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	+/-?	C +/-?	Policy M10 may potentially restrict non-mineral developments that could otherwise have a negative effect on the historic environment, heritage assets and their setting, by safeguarding existing and planned minerals infrastructure sites. However, safeguarding permanent minerals infrastructure including the existing wharves and railheads listed in criteria 'c' and 'e' of the policy will ensure that other production infrastructure continue to operate unaffected by incompatible developments, which may therefore prolong existing impacts on the historic environment. It must be emphasised, however, that the process of safeguarding minerals infrastructure does not mean 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 other production infrastructure within Safeguarding Areas. Policy M10 is likely to have mixed minor positive and minor negative uncertain effects on Cultural ecosystem services.
9. To protect and, where possible,	0	R 0	Safeguarding any existing minerals infrastructure including the permanent wharves and railheads listed in criterion 'c' and temporary wharves in criterion 'e' of the policy is

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
enhance soil quality, and minimise the loss of best and most versatile land.			unlikely to affect this SA objective. Therefore no effect is expected for this SA objective. Policy M10 is considered unlikely to have any effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+/-?	R +/-?	Policy M10 may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to increases in air pollution as a result of lorry traffic. However, safeguarding existing minerals production infrastructure will ensure that it can continue to operate unaffected by incompatible developments, which could result in an increase in air pollution from on-site vehicles and machinery, and lorry traffic. Conversely, the safeguarding of railheads and wharves contributes to reducing the quantity of minerals being transported by lorries, thus reducing air pollution. Overall, a mixed effect, minor positive/minor negative is likely for this SA objective. It must be emphasised, however, that the process of safeguarding minerals infrastructure does not mean that infrastructure will be automatically be 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. Policy M10 is likely to have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Safeguarding any existing minerals infrastructure including the permanent wharves and railheads listed in criterion 'c' and the temporary wharves in criterion 'e' of the policy is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective. Policy M10 is considered unlikely to have any effect on Regulating ecosystem services.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Safeguarding any existing minerals infrastructure including the existing wharves and railheads listed in criteria 'c' and 'e' of the policy is unlikely to affect this SA objective. Therefore no effect is expected for this SA objective.</p> <p>Policy M10 is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+/-?	R +/-?	<p>Policy M10 may potentially restrict non-mineral developments that could otherwise have a negative effect on the environment and communities due to potential adverse impacts of lorry traffic. Additionally, safeguarding wharves and railheads identified in criteria 'c' and 'e' reduces the volume of minerals to travel by lorry which will in turn reduce air pollution. However, safeguarding minerals infrastructure will ensure that existing infrastructure continues 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. It must be emphasised, however, that the process of safeguarding minerals infrastructure does not mean 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.</p> <p>Policy M10 is likely to have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	+/-?	R +/-?	<p>Production infrastructure safeguarded by Policy M10 may potentially restrict non-mineral developments that could otherwise have a negative effect on emissions of greenhouse gases. Additionally, safeguarding wharves and railheads identified in criteria 'c' and 'e' reduces the volume of minerals to travel by lorry which in turn will reduce greenhouse gas emissions. However, safeguarding minerals infrastructure will ensure that existing</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>infrastructure continues to operate unaffected by incompatible development that could have a detrimental impact due to the adverse impacts of emissions from on-site vehicles and machinery, and lorry traffic. Overall, a mixed minor positive/minor negative effect is likely for this SA objective. It must be emphasised, however, that the process of safeguarding minerals infrastructure does not mean 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.</p> <p>Policy M10 could have mixed minor positive and minor negative uncertain effects on Regulating ecosystem services.</p>

Policy M11 – Strategic Minerals Site Allocations

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	-	N/A	<p>The extraction of minerals at the allocated sites within Policy M11 (Ham Farm for soft sand extraction and West Hoathly Brickworks for brick clay) could have minor negative impact on amenity for local residents and visitors. Both sites are within 100m of residential properties. Therefore, there is potential for development at these sites to have a minor negative effect on health due to the potential for dust (PM10) and minor negative effects on amenity. These effects are likely to be localised due to the fact that both allocations are not within 100m of any areas allocated for new residential development in Horsham or Mid</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Sussex Local Plans or existing mineral or waste site in West Sussex Waste Local Plan.</p> <p>The impact upon health at both allocations will be dependent on local circumstances and the policy seeks to ensure that these are addressed through specific development principles set out for each site, e.g. Screening, an assessment of the impact on the amenity of dwellings nearby and implementation of measures to ensure that services and utilities are avoided.</p> <p>The policy also safeguards the allocated sites from development on or adjoining the site that would prejudice its development. This will be important at West Hoathly Brickworks, where it has been identified that land to the south west of the site could be utilised for housing development (West Hoathly Neighbourhood Plan 2014-2031 Submission Document, September, 2014). Overall, an uncertain minor negative effect is therefore likely as the policy is likely to impact upon health and well-being of local residents and visitors to West Sussex.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	-	C -	<p>Ham Farm is within 250m of the South Downs National Park (SDNP), while the allocation at West Hoathly Brickworks is within the High Weald AONB. In addition, both sites include recreational facilities such as Public Footpaths (2599 and 2514) in Ham Farm and Bluebell Railway, a heritage railway line which uses steam trains at the allocation at West Hoathly Brickworks. Therefore, there is potential for a minor negative effect from the site allocations supported by Policy M11.</p> <p>The policy includes specific site related development principles, which proposals at these allocated sites will need to include at the planning stage. For Ham Farm, this includes a 20m exclusion zone around Footpath no. 2599, and an assessment of the visual intrusion at West Hoathly Brickworks.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Overall, development at these sites could have a minor negative effect on the local recreational facilities and users of the countryside, AONB and the SDNP, although some of these effects may be able to be mitigated through adherence to the site development principles.</p> <p>The policy is likely to have minor negative effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>Both mineral sites allocated in Policy M11 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, thereby encouraging the provision of more local based skills. However, job creation is not expected to be significant within the West Sussex 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. Furthermore, as the site is an extension to an existing site, there may not be a net increase in employment but a continuation in employment.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	S -	<p>New potential mineral sites (such as the two allocated by Policy M11) are not classed as inappropriate development with respect to sterilisation of mineral resources, as the allocation of this potential mineral site would have a positive effect on this objective as it would provide a degree of protection to minerals resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	--	C --	<p>There are two Areas of Outstanding Natural Beauty (AONBs) in the County, also the South Downs National Park (SDNP) and other important Landscape Character Areas within West Sussex and therefore the impact of minerals working is an important factor to consider. Ham Farm is within 250m of the South Downs National Park (SDNP), while the allocation at West Hoathly is within the High Weald AONB.</p> <p>In respect of Ham Farm, in order to comply with the development principles set out in the supporting text to Policy M11, an appropriate assessment of the landscape which considers the setting of the SDNP should be undertaken. The LUC 2016 Addendum Landscape Sensitivity and Capacity Study scored the overall landscape sensitivity as 'medium' sensitivity to sand extraction. The site specific development principles therefore require development proposals to include screening and protection of existing hedgerows as well as a landscape and visual impact assessment to consider the setting, which should identify appropriate mitigation of the impacts upon the SDNP.</p> <p>The allocation at West Hoathly Brickworks was assessed as having a medium to high sensitivity impact, with the east of the site of higher sensitivity due to the proximity of the village of Sharpthorne, the Historic Park and Garden to the south and the higher visual sensitivity of the area. Subtle complexity of the landscape structure reduces the capacity of the site to accommodate development without some erosion of the character value of the surrounding area. However, the low-lying topography allows scope for the mitigation of visual intrusion by planting to reduce visibility from the hills to the northwest. The site specific development principles for this site include mitigation measures to be provided such as screening and protection of existing hedgerows and the phasing of extraction activities to limit the visual impact. Adherence to these development principles is likely to reduce the potential for unacceptable impact on the character, distinctiveness or sense of place of West Sussex and SDNP and the AONB. The policy further supports this by stating how specific mineral development should mitigate against any potential negative impact on the character of the local amenity.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Although the effects of development at Ham Farm are likely to be minor negative, overall, both allocations are likely to affect designated landscapes and local landscape characters within the County and therefore the potential for a significant negative effect is likely.</p> <p>The policy is considered likely to have significant negative effect on Supporting ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	<p>P --?</p> <p>R --?</p> <p>C --?</p>	<p>In respect of the allocation at Ham Farm, it is noted that the site is adjacent to Ancient Semi Natural Woodland (Great Alder Wood) to the east and Alder Wood is located immediately adjacent to the site to the north.</p> <p>West Hoathly Brickworks is adjacent to Ancient Woodland (Front Wood to the north east, Blackwood Wood and Cookhams Shaw to the west); West Hoathly SSSI is approximately 310m west of the site. In relation to international sites, Ashdown Forest SPA/SAC is approximately 1.5km east of the allocation. In addition, this site also includes a small waterway which feeds into a number of tributaries which eventually reach the Medway Estuary and Marshes SPA/Ramsar. The site was 'screened in' to the HRA, which concluded that significant effects on the integrity of the SAC/SPA/Ramsar sites could not be ruled out.</p> <p>Suitable mitigation has been provided through the site-specific development principles in the supporting text to Policy M11, including assessment of nearby woodland and the protection of local vegetation. At Ham Farm, a tree survey and arboriculture impact assessment will be required to ensure that retained trees are adequately protected from site operations and that any which are removed are clearly identified and appropriate mitigation proposed. Therefore, the policy should help to conserve natural habitats and protected species within the allocated mineral sites and those nearby including International Sites.</p> <p>Nonetheless, both allocations include or are in close proximity to a local biodiversity site or habitat and as such, a significant negative effect is likely on</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>this SA objective.</p> <p>The policy is considered likely to have significant negative effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0/-	C 0/-	<p>There is no national site of geological interest (SSSI) or Local Geological Site (LGS) within 500m of the Ham Farm Site; however, the West Hoathly Brickworks site allocations is approximately 310m east of the West Hoathly Brickworks SSSI and 140m from the LGS at West Hoathly Brickworks, Sharpthorne.</p> <p>Therefore, this policy is expected to result in a mixed (negligible effect at Ham Farm and minor negative effect at West Hoathly Brickworks) effect for this SA objective.</p> <p>The policy is considered to have a mixed negligible and minor negative effect on Cultural ecosystem services</p>
8. To conserve, and where possible, enhance the historic environment.	-?	C -?	<p>Both sites allocated through Policy M11 are within 1km of several historic assets. At Ham Farm, the Grade II Listed Horsebrook Cottage is within 100m of the western boundary. To the east there are several Grade II Listed buildings, the closest being Water Tower and Sun Room at Wappingthorn which is approximately 760m away. Wiston Park Historic Parkscape, which includes Listed Buildings is located to the south west on the opposite side of Washington Road.</p> <p>At West Hoathly Brickworks, Courtlands West Hoathly Historic Parkscape is located to the south of Top Road. Also to the south is Northwood House Historic Parkscape 880m away and Aldern House Grade II Listed Building. In addition, there are two other Listed Buildings to the north; Old Coombe House, 861m away and Blackland Farmhouse 930m away.</p> <p>Both sites may also contain archaeological remains and artefacts.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>These cultural assets could therefore be affected by minerals extraction at these sites, however the supporting text to Policy M11 incorporates development principles for each site, which aim to protect specific cultural assets. For example, an historic building setting impact assessment of nearby listed building (Horsebrook Cottage) at Ham Farm and an assessment of the impact on nearby listed buildings (Aldern House, Old Coombe House and Blackland Farmhouse) and the Historic Parks (Courtlands and Horthwood House) at West Hoathly Brickworks. In addition, a Lidar survey and mitigation will also be required at West Hoathly Brickworks.</p> <p>Therefore, although the policy ensures that some historic designations are conserved, overall a minor negative effect on this SA objective is likely.</p> <p>The policy is considered likely to have a minor negative effect on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	R -	<p>Both allocations are medium sized (between 9 ha and 16.5 ha). The site at Ham Farm is located on grade 2 and 3 agricultural land, while the allocation at West Hoathly Brickworks is entirely on grade 3 agricultural land. Therefore, Policy M11 could have a minor negative effect on protecting or enhancing soil/land quality.</p> <p>The policy is likely to have a minor negative effect on regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0/-	R 0/-	<p>Both allocations in Policy M11 are over 1km from an Air Quality Management Area (AQMA). However, operations at the Ham Farm site may result in traffic passing through an AQMA at the A283 High Street/Manley's Hill, Storrington. A negligible effect on air pollution was identified for the West Hoathly Brickworks site.</p> <p>Suitable mitigation has been incorporated into the supporting text to Policy M10 through the design and development principles including requiring an</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>assessment of the cumulative impact, which includes transport considerations.</p> <p>Overall, this policy is considered likely to have a mixed (negligible for West Hoathly Brickworks and a minor negative for Ham Farm) effect on protecting air quality for human sensitive receptors. Although this impact is very dependent on the type of mineral site, likely routes to be taken by HDVs, the scale of the operations and the potential mitigation measures proposed, which would need to be incorporated in planning application proposals.</p> <p>The policy is considered to have a mixed negligible and minor negative effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0/-?	R 0/-?	<p>Neither site allocation in Policy M11 is within SPZ1. However, the allocation at Ham Farm has one surface water stream running along the north western boundary of the site, but also a very small water body in the northern corner of the site. Therefore, the site has the potential to have a minor negative effect on this objective as it is adjacent to a surface water body. However, this effect would be uncertain as it would be very dependent on the exact nature, working and proposed design of the site.</p> <p>Suitable mitigation has been incorporated into the supporting text to Policy M10 through the development principles, which will require developers to ensure that buffers are created and retained around water courses on both sites.</p> <p>Overall, a mixed (negligible at West Hoathly Brickworks and uncertain minor negative at Ham Farm) effect is likely for this objective.</p> <p>The policy is considered to have a mixed negligible /minor negative effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate	0/-?	R 0/-?	<p>Both allocations in Policy M11 are within Flood Zone 1.</p> <p>According to the SFRA Update and Sequential Test of Mineral Sites (July 2015) Ham Farm was of a low risk (yellow) in relation to surface water as 10% of site</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
development in the floodplain.			<p>was at risk. In addition, a large part of the site (50%) was identified as having a high risk (red) in relation to ground water. Therefore, development is considered to have a minor negative effect on flood-risk areas, and potentially increase the risk of flooding elsewhere.</p> <p>In the SFRA, the allocation at West Hoathly Brickworks was found to have no effect (green) on most of the flooding sources, with the exception to surface water where a low risk (yellow) was identified for a small part of the site (10%). Therefore, development is considered to have a negligible effect on flood-risk areas</p> <p>Suitable mitigation has been incorporated into the supporting text to Policy M10 through the development principles for planning proposals on both sites, which will need to ensure that buffers are created and retained around water courses. Overall, a mixed (negligible for West Hoathly Brickworks and a minor negative for Ham Farm) effect is likely for this objective.</p> <p>The policy is considered to have a mixed negligible /minor negative effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0/-?	R 0/-?	<p>According to The West Sussex Minerals Local Plan: Transport Assessment (2015) and the Ham Farm Addendum (2016) both allocations in Policy M11 have a 'High' acceptability rating. However, these sites are unlikely to have opportunities for non-road based transport, including this site, could have a minor negative effect on this objective.</p> <p>This policy includes appropriate development principles for planning proposals on both sites with transport route and access arrangements to avoid cumulative impacts.</p> <p>Overall, a mixed (negligible /minor negative effect) is likely for this objective.</p> <p>The policy could have a mixed (negligible /minor negative) effect on regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
14. To reduce the emissions of greenhouse gases.	+/-	R +/-	<p>The Ham Farm site is likely to be within 4km of an allocated site within a local or neighbourhood plan within Horsham District. Therefore, development at this site could contribute to reducing transport distances of aggregates for construction. In addition, the allocation of a clay extraction site at West Hoathly would enable the brickworks to continue to be supplied from an adjacent site, which would reduce clay transport distances.</p> <p>However, both mineral site allocations within Policy M11 could lead to the production of carbon dioxide or other greenhouse gases from on-site vehicles and machinery, although sand and gravel sites, and clay sites (such as this site) are likely to be less intensive than crushed rock sites thus having lower effects. Therefore, both sites are likely to have minor negative effects on the production of greenhouse gases from on-site vehicles and machinery.</p> <p>Therefore, overall, a mixed minor positive/minor negative effect is likely.</p> <p>The policy could have mixed minor positive/minor negative effects on regulating ecosystem services.</p>

Appendix 9

SA Matrices for Proposed Submission Draft JMLP Development Management Policies

Policy M12: Character

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy aims to protect the local amenity of the residents, neighbouring land uses and visitors to West Sussex through ensuring that mineral site development will not have an unacceptable impact on the distinctive character of towns and villages (including specific areas or neighbourhoods). A minor positive effect is therefore likely as the policy does not address the health or well-being of local residents and visitors to West Sussex.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>A minor positive effect is likely on this SA objective as through the protection of the local character from inappropriate mineral workings, this policy could also prevent development impeding on access to the countryside, open spaces and Public Rights of Way as these areas are associated with local landscape characteristics.</p> <p>The policy is likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. As such, no effect is expected.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates	0	S -	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
and other minerals sufficient for the needs of society.			<p>Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>There are two Areas of Outstanding Natural Beauty (AONB) in the County, also the South Downs National Park (SDNP) and other important Landscape Character Areas within West Sussex and therefore the impact of minerals working is an important factor to consider.</p> <p>Through only permitting development that will not have an unacceptable impact on the character, distinctiveness or sense of place of West Sussex and SDNP, the policy will protect the local landscape. The policy further supports this by stating where possible, mineral development should reflect and reinforce the character of the main natural character areas. Additionally, the policy ensures that settlements keep their individual identities through only permitting development that does not lead to perceived or actually coalescence. As such, a significant positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Supporting ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Through protecting the character of West Sussex and the South Downs National Park, the policy could also conserve natural habitats and protected species as a large part of West Sussex is formally designated as being of international, national, regional and local importance for nature conservation. As such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services</p>
8. To conserve, and where possible, enhance the historic environment.	+	C +	<p>West Sussex contains a large number of designations relating to the historic environment; including 235 Conservation Areas¹⁵¹ and 7,532 Listed Buildings which are of architectural and historic interest covering every kind and age, reflecting the traditions and history of the area¹⁵². West Sussex also has an exceptionally rich archaeological heritage which contributes to its character.</p> <p>Through protecting and, where possible, enhancing the unique landscape of West Sussex and the South Downs National Park from inappropriate minerals development, these historic designations could be conserved and so a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p>

¹⁵¹ https://www.westsussex.gov.uk/living/environment_and_planning/environment/conservation_areas.aspx

¹⁵² West Sussex County Council (May 2014) West Sussex Minerals Local Plan Background Paper 1, Setting the Context: Spatial Portrait.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			The policy is considered unlikely to have any effect on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Protecting the character of West Sussex and the South Downs National Park from inappropriate mineral development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M13: Protected Landscape

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The development of a minerals site could have an adverse impact on the local amenity creating an unpleasant environment for local residents and visitors. Through protecting the landscape, this policy aims to protect both the designated landscapes and landscapes outside designated areas from inappropriate development. As such, a minor positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>The policy aims to protect both designated and undesignated landscapes within West Sussex from inappropriate minerals development. In achieving this, access to the countryside, open spaces and Public Rights of Way could be protected and as such, a minor positive effect is identified on this SA objective.</p> <p>The policy is likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates	0	S -	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
and other minerals sufficient for the needs of society.			Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>Within West Sussex, there are two Areas of Outstanding Natural Beauty (AONB), the South Downs National Park (SDNP) and other important Landscape Character Areas and therefore the impact of minerals working is a an important factor to consider.</p> <p>Through protecting the National Park and the two AONBs from unnecessary and inappropriate development, the policy aims to conserve and enhance the landscape, local distinctiveness and landscape character in West Sussex. It outlines that mineral development proposals within protected landscapes must be a small-scale development to meet local needs that can be accommodated without undermining the objectives of the protected landscape. In addition criterion (b) states that minerals development outside of designated landscapes should not undermine their designation. Furthermore criterion (c) requires any development that has the potential to impact on the landscape will ned to be mitigated to a satisfactory level. As such, a significant positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	<p>P +</p> <p>R +</p> <p>C +</p>	<p>Through the protection of designated landscapes from mineral workings, the policy could conserve biodiversity as a large part of West Sussex is formally designated as being of international, national, regional and local importance for nature conservation. As such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+	C +	<p>In West Sussex there are a large number of designations relating to the historic environment; including 235 Conservation Areas¹⁵³ and as an indirect effect of protecting the National Park and AONBs from unnecessary and inappropriate development, the policy could also conserve these historic environment designations. As such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

¹⁵³ https://www.westsussex.gov.uk/living/environment_and_planning/environment/conservation_areas.aspx

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Protecting the National Park and AONBs from unnecessary and inappropriate development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M14: Historic Environment

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	0	N/A	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. As such, a negligible effect is identified. Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>West Sussex has a rich archaeological heritage which represents a constraint to minerals development with specific reference to Scheduled Monuments as the origins of their settings are in tranquil landscapes. Through the protection of these designations, and other historical designations within West Sussex, the policy is likely to have a significant positive effect on this SA objective as minerals development can impact on the landscape. Although it is not specifically mentioned in the policy, the supporting text describes how the setting of heritage and archaeological assets will be considered. Mineral workings, however, can vary depending on the nature of the minerals development and associated works, and the nature of the landscape within which it is sited.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P 0 R 0 C 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Provisioning, Regulating and Cultural ecosystem services</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
8. To conserve, and where possible, enhance the historic environment.	++	C ++	<p>West Sussex contains a large number of designations relating to the historic environment, including 235 Conservation Areas¹⁵⁴, 7,532 Listed Buildings, 34 Registered Park and Gardens, 346 Scheduled Monuments¹⁵⁵ and has an exceptionally rich archaeological heritage. Through the protection and where possible, enhancement of the natural and historic environment and resources and consideration of not adversely affecting currently unknown heritage assets with significant archaeological interest, this policy is likely to have a significant positive effect on this SA objective. Although it is not specifically mentioned in the policy, the supporting text also describes how the setting of heritage and archaeological assets will be considered.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	<p>Additional traffic associated with minerals development may increase levels of nitrogen oxides and sulphur dioxide, produced by exhaust fumes which can have a detrimental impact on the fabric of historic buildings. The policy may therefore have a minor positive effect on this SA objective, as it will help ensure that proposals minimise their air quality impacts associated with mineral workings so that they are adequate and do not affect the fabric of historic</p>

¹⁵⁴ https://www.westsussex.gov.uk/living/environment_and_planning/environment/conservation_areas.aspx

¹⁵⁵ <http://list.english-heritage.org.uk/>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>buildings, and therefore the wider air quality of West Sussex.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+?	R +?	<p>Vibration from increased traffic may impact on standing structures, earthworks and buried deposits. The policy may therefore have a minor positive effect on this SA objective, as it will help ensure that proposals minimise their adverse impacts of lorry traffic on the environment. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Regulating ecosystem services.</p>
14. To reduce the emissions of	0	R 0	<p>Protecting and, where possible, enhancing the natural and historic environment and resources within West Sussex and the South Downs National Park is unlikely</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
greenhouse gases.			<p>to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M15: Air and Soil

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy is likely have a minor positive effect on this SA objective, as it seeks to protect air quality. This will help ensure the protection and of air quality amongst the residents of West Sussex – particularly as there are ten Air Quality Management Areas (AQMAS) within the county, which will prevent any effects on the health and wellbeing of local communities and visitors to West Sussex.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	CO	<p>Protecting and, where possible, enhancing air and soil quality in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting and, where possible, enhancing air and soil quality in West Sussex are unlikely to affect this SA objective. As such, a negligible effect is identified.</p> <p>Protection of the local economy would be supported by provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Protecting and, where possible, enhancing air and soil quality in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>The policy seeks to ensure that there are no unacceptable impacts on the quality of air and soil resulting from mineral development in West Sussex. A minor positive effect is likely on this SA objective as protecting these elements form basic landscape features could contribute protecting the landscape.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Mineral developments can have adverse effects on air and soil quality but the policy seeks to protect and, where possible, enhance the natural resources in West Sussex. This is achieved by avoiding or appropriately mitigating any negative effects thus benefiting biodiversity as a whole in West Sussex and as such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting and, where possible, enhancing air and soil quality in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+	C +	<p>A minor positive effect is likely on this SA objective as mineral workings can increase traffic levels which in turn can increase levels of nitrogen oxides and sulphur dioxide, produced by exhaust fumes. These can have a detrimental impact on the fabric of historic buildings and as the policy states that mineral development proposals are to have no unacceptable impacts on the intrinsic quality of air, a minor positive effect is likely on this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			The policy is considered likely to have minor positive effects on Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+	R +	<p>A minor positive effect is likely on this SA objective as the policy seeks to only permit minerals developments that have no unacceptable impacts on the intrinsic quality or quantity of soil. The policy however, does not address minimising the loss of best and most versatile land.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	++	R ++	<p>The air quality in West Sussex is generally good but faces threats from pollution caused by industrial processes and traffic. The policy seeks to address the effects of mineral developments through avoiding or appropriately mitigating any negative effects and providing enhancements. Additionally, the policy will only permit mineral proposals that have no unacceptable impacts on the management and protection of air quality, including any adverse impacts on any of the ten Air Quality Management Areas in West Sussex. A significant positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	+	R ++	<p>A minor positive effect is likely on this SA objective as through protecting air and in particular soil quality, the water environment (including ground and surface water) is likely to be protected also. The policy supports this by only permitting mineral development proposals that will not have unacceptable impacts on the intrinsic quality of, and where appropriate the quantity of, air and soil.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	<p>Protecting and, where possible, enhancing air and soil quality in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M16: Water Resources

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy is likely have a minor positive effect on this SA objective, as it seeks to protect the water environment. This will help ensure the protection of the quality and quantity of water thereby protecting public drinking water supplies, which will prevent any effects on the health and wellbeing of local communities and visitors to West Sussex.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	CO	<p>Protecting and, where possible, enhancing water quality in West Sussex is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting and, where possible, enhancing water quality in West Sussex is unlikely to affect this SA objective. As such, a negligible effect is identified.</p> <p>Protection of the local economy would be supported by provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Protecting and, where possible, enhancing water quality in West Sussex is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>The policy seeks to ensure that there are no unacceptable impacts on the quality and where appropriate, quantity of water resulting from mineral development in West Sussex. A minor positive effect is likely on this SA objective as protecting this element that forms basic landscape features could contribute protecting the landscape.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Mineral developments can have adverse effects on water quality but the policy seeks to protect and, where possible, enhance water quality in West Sussex. This is achieved by avoiding or appropriately mitigating any negative effects thus benefiting biodiversity as a whole in West Sussex and as such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Protecting and, where possible, enhancing water quality in West Sussex is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	0	C 0	<p>Protecting and, where possible, enhancing water quality in West Sussex is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting and, where possible, enhancing water quality in West Sussex is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Protecting and, where possible, enhancing water quality in West Sussex is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	++	R ++	<p>A significant positive effect is likely on this SA objective as the policy seeks to protect and, where possible, enhance the natural resources in West Sussex. The policy will only permit mineral development proposals if they can demonstrate that they will not cause unacceptable risk to the quality of surface and groundwater (including reservoirs), or the quality of rivers and other watercourses and water bodies within the area or downstream (including within built-up areas).</p> <p>The policy is considered likely to have significant positive effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	R +?	<p>The policy states that mineral development proposals will only be permitted if they can demonstrate that they will not cause unacceptable risk to the quantity of surface and groundwater. A minor positive effect is therefore likely although uncertain as it would depend on the location and type of mineral activity.</p> <p>The policy is considered likely to have minor positive uncertain effects on</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Protecting and, where possible, enhancing natural resources in West Sussex are unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M17: Biodiversity and Geodiversity

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	++	N/A	<p>Biodiversity can provide direct benefits to people, for example recreational, aesthetic and health benefits. The most recent visitor survey for the South Downs National Park showed that wildlife is a key attraction for over a quarter of the visitors (26%) to the Park equating to 11.5 million visits per year to see wildlife and habitats.</p> <p>The policy ensures that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection from mineral workings which will therefore contribute to the health and well-being of both residents and visitors. As such, a significant positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all four categories of ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>Public Rights of Way and open access land are often located within/on designated biodiversity sites and areas with wildlife interest. As the policy aims to protect these sites, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positives effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>Important habitats and biodiversity can have a strong relationship with landscapes. The conservation and enhancement of biodiversity via the policy will therefore have minor positive effects on this SA objective, as it will also protect and contribute towards the important landscapes within West Sussex.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	++	P ++ R ++ C ++	<p>The policy seeks to ensure that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to biodiversity can be secured where possible. A significant positive effect is therefore likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	++	C +	<p>The policy is likely to have a significant positive effect on this SA objective as it aims to protect and enhance geodiversity where possible.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
8. To conserve, and where possible, enhance the historic environment.	0	C O	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R O	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R O	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R O	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Ensuring that both protected and non-protected sites for nature conservation and species are given the appropriate level of protection, and that enhancement to both biodiversity and geodiversity can be secured where possible is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M18: Public Amenity and Health

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	++	N/A	<p>The policy seeks to manage the impacts on local amenity including the consideration of any particular issues in areas where there is a concentration of minerals workings. This includes only permitting mineral development proposals where lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity. As such, a significant positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	++	C ++	<p>The policy specifies that the routes and amenity of Public Rights of Way are safeguarded, or where temporary or permanent re-routeing can be justified, replacement routes of comparable or enhanced amenity value are provided. As such, a significant positive effect is therefore likely on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing	0	S -	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
for the supply of aggregates and other minerals sufficient for the needs of society.			SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C 0	Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	Through protecting communities from the adverse impacts of minerals development, the policy will also protect biodiversity including natural habitats and protected species from lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic. As such, a minor positive effect is likely on this SA objective. The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C 0	Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	+	C +	The policy seeks to protect communities from the adverse impacts of minerals development by only permitting development that controls lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic to safe levels for humans. Vibrations and emissions can harm historic assets and

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>therefore through the policy reducing these, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	<p>Through protecting communities from the adverse impacts of minerals development, the policy will only permit development where lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health. The aim of the policy will therefore reduce air pollution and as such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate	0	R 0	<p>Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
development in the floodplain.			SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+	R +	Proposals for mineral development will be permitted provided that lighting, noise, dust, odours, vibration and other emissions, including those arising from traffic, are controlled to the extent that there will not be an unacceptable impact on public health and amenity. As this could minimise transport of minerals by roads, a minor positive effect is likely on this SA objective. The policy is considered likely to have minor positive effects on Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	0	R 0	Protecting communities from the adverse impacts of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.

Policy M19: Flood Risk Management

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>Flooding can endanger lives, damage settlements and can also adversely affect the health of people. This is especially true in West Sussex where in 2009 there were 75 significant flood events resulting from 51 rainfall events. As such, this policy is likely to have a minor positive effect on this SA objective as it supports flooding mitigation measures to be provided to an appropriate standard.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient	0	S -	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
for the needs of society.			minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>Flooding can damage buildings and settlements and also adversely affect the characteristics of landscapes. As this policy seeks to minimise flood risk through permitting developments that include mitigation measures and adhere to shoreline and catchment management plans, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>Flooding can damage habitats and therefore through implementing mitigation measures and adhering to shoreline and catchment management plans, this policy is likely to have a minor positive effect on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	0	C 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	+	R +	<p>The policy outlines that mitigation measures need to be set out in mineral development proposals and through methods such as Sustainable Drainage Systems (SuDS), water quality can also be improved. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	++	R ++	<p>Minerals sites can also contribute to reducing flood risk as they can offer opportunities for water storage. The policy is likely to have significant positive effects on this SA objective as it supports proposals that reduce the likelihood and impact of flooding both on and off-site. This is required in West Sussex as over 12% of the county lies within a flood plain¹⁵⁶ and the coastline is generally low-lying and is naturally sinking. This results in increased vulnerability to the impact of climate change including coastal, river (fluvial), groundwater and</p>

¹⁵⁶ The flood risk datasets for West Sussex have not yet been collected from the relevant body and are therefore not available for inclusion in the SA at this time. It will, however, be included in further stages of the SA.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>surface water flooding resulting from sea-level rise, increased storminess, increased winter rainfall, and higher and more intensive waves.</p> <p>The policy is considered likely to have significant positive effects on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Minimising the risk to people, property and the environment from flooding is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M20: Transport

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>Transport is a major issue when considering proposals for mineral development as the generation of traffic can and does have negative impacts on the wellbeing and health of local communities. The proposed policy may have minor positive effects on this SA objective as it supports proposals that use rail or water to transport minerals. The policy also states that where the transportation of minerals is required by road, the Advisory Lorry Route with minimal use of local roads should be utilised which could reduce the volume of lorries near local communities. 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.</p> <p>The protection of health and well-being would be supported by all four of the categories of ecosystem services but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+?	C +?	<p>Transport is a major issue when considering proposals for mineral development as the generation of road traffic can and does have negative impacts on the environment and landscape. The proposed policy may have minor positive effects on this SA objective as it aims to use sustainable modes of transport (rail and water) before considering road options. The policy also seeks to ensure that and required road use for materials are capable of being transported using the Advisory Lorry Route with minimal use of local roads, therefore reducing the impact on the landscape character in West Sussex. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	P + R + C +	<p>Minerals working can generate road traffic which can and does have negative impacts on the environment and therefore biodiversity. The policy seeks to minimise road traffic and prioritise sustainable methods of transportation (rail and water) above road. A minor positive effect is identified as these measures will reduce adverse effects such as noise, air pollution, and vibration which would protect habitats and protected species. 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.</p> <p>The policy is considered likely to have minor positive effects on Provisioning,</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	+?	C +?	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. The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	Air quality in West Sussex is generally good but faces threats from pollution caused by industrial processes and traffic. The policy supports sustainable modes of transport (rail and water) over road, and so a minor positive effect is likely because through minimising traffic, air pollution maybe reduced. The policy is considered likely to have minor positive effects on Regulating

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Encouraging the most sustainable method to transport minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	++	R ++	The policy seeks to minimise transport of minerals by roads through supporting sustainable modes of transport (water and rail) over road. Where road use is necessary however, the policy promotes use of the Lorry Route Network to avoid local roads. Additionally, The supporting text states that the majority of mineral proposals concerning unallocated sites will need to provide a Transport Assessment and Travel Plan. As such, a significant positive effect is likely on this SA objective. The policy is considered likely to have significant positive effects on Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	+	R +	Through prioritising sustainable modes of transport (rail and water) the policy will reduce vehicle emissions thus reducing greenhouse gases. A minor positive effect is therefore identified on this SA objective. The policy is considered likely to have significant positive effects on Regulating ecosystem services.

Policy M21: Aerodrome Safeguarding

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	0	N/A	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>A minor positive effect is likely on this SA objective as the policy ensures that the operational integrity or safety of aviation facilities is not adversely affected by minerals development.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P O R O C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	0	C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	0	C O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R O	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Regulating ecosystem services.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Ensuring the operational integrity or safety of aviation facilities is not adversely affected by minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M22: Cumulative Impact

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy outlines that mineral development proposals will only be permitted where it can be demonstrated that there will not be an unreasonable level of disturbance to local residents, businesses and visitors either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. This will therefore include the consideration of the well-being and amenity of local residents and the supporting text draws on specific reference is made in the policy to the potential impacts of noise and odour. As such, a minor positive effect is likely on this SA objective.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+?	C +?	<p>The policy outlines that mineral development proposals will only be permitted where it can be demonstrated that there will not be an unreasonable level of disturbance the environment either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. This could therefore include the consideration of Public Rights of Way. As such, a minor positive effect is likely on this SA objective. However, the effects are uncertain as the location of the proposed mineral workings will determine the effect on recreational opportunities.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>The policy outlines that mineral development proposals will only be permitted where it can be demonstrated that there will not be an unreasonable level of disturbance to businesses either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>As such, a minor positive effect is expected on this SA objective as the policy will help to avoid the vitality and viability of the local economy being compromised by mineral developments operating simultaneously and/or successively.</p> <p>Protection of the local economy would be supported by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Consideration of cumulative effects of previous and existing minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+	C +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of the landscape, local distinctiveness and landscape character in West Sussex. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	P + R + C +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of biodiversity including natural habitats and protected species in West Sussex. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Provisioning, Regulating and Cultural ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
7. To protect and conserve geodiversity.	+	C +	<p>The policy outlines that mineral development proposals will only be permitted where it can be demonstrated that there will not be an unreasonable level of disturbance the environment either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. This could therefore include the consideration of geodiversity. As such, a minor positive effect is likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+?	C +?	<p>The policy states that mineral development proposals will only be permitted where it can be demonstrated that an unreasonable level of disturbance to the environment will not occur either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. A minor positive effect is identified as the historic environment could be considered as an environmental factor. However, the effects are uncertain as the location of the proposed mineral workings will determine the effect on the historic environment.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+	R +	<p>This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of soil quality and the loss of best and most versatile land. A minor positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have minor positive uncertain effects on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible,	+	R +	<p>Through the consideration of cumulative impacts of minerals development on the environment, air pollution levels will be assessed as part of a proposal and</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
enhance air quality.			as such, this policy will have a minor positive effect on this SA objective. The policy is considered likely to have minor positive effects on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	+	R +	The policy states that mineral development proposals will only be permitted where it can be demonstrated that an unreasonable level of disturbance to the environment will not occur either individually or as a cumulative effect alongside other sites operating simultaneously and/or successively. A minor positive effect is identified as water quality is considered as an environmental factor. The policy is considered likely to have minor positive effects on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of flooding. A minor positive effect is therefore identified on this SA objective. The policy is considered likely to have minor positive effects on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	+	R +	Through considering cumulative impacts of minerals development on the environment, this policy will have a minor positive effect on this SA objective as levels of traffic will be considered and monitored on existing minerals workings and new site proposals. The policy is considered likely to have minor positive effects on Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	+	R +	This policy will only permit development that will not have an unreasonable level of disturbance to the environment which includes the consideration of reducing greenhouse gas emissions. A minor positive effect is therefore identified on this

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>SA objective.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>

Policy M23: Design and Operation of Mineral Developments

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy considers the varied traditions and character of the different parts of West Sussex and the South Downs National Park including townscales, streetscapes and the protection of existing features of cultural and landscape significance. A minor positive effect is therefore likely on this SA objective as it protects the amenity of residents and visitors to West Sussex and the South Downs National Park.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>Mineral proposals including ancillary development, may affect the amenity of users of the countryside, in particular those using the Public Rights of Way (PROW) network. The policy requires the protection of existing features of landscape significance and this could protect the 4000km of PROW and access to the countryside in West Sussex. A minor positive effect is therefore likely on this SA objective.</p> <p>The policy is considered likely to have minor positive effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Developing an appropriate approach to the sustainable design and operation of minerals developments is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by provisioning ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	<p>Developing an appropriate approach to the sustainable design and operation of minerals developments including ancillary development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	++	C ++	<p>Through protecting and, where possible, enhancing the unique landscape and townscape character of West Sussex and the South Downs National Park, this policy is likely to have a significant positive effect on this SA objective. The policy states that proposals for minerals development including ancillary development will be permitted provided that, where appropriate, the scale, form, and layout (including landscaping) take into account the local context including the skyline and topography.</p> <p>The policy is considered likely to have significant positive effects on Cultural ecosystem services.</p>
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P 0 R 0 C 0	<p>Developing an appropriate approach to the sustainable design and operation of minerals developments is unlikely to affect this SA objective as the policy focuses on landscape-related considerations. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered likely to have negligible effects on Provisioning, Regulating and Cultural ecosystem services.</p>
7. To protect and conserve geodiversity.	+?	C +?	<p>The policy requires mineral development proposals to consider the local context of the proposed workings and to protect existing features of cultural and landscape significance which could include Local Geological Sites. A minor positive effect is therefore identified. However, the effects are uncertain as the</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			location of sites would determine the outcome of this SA objective. The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	+	C +	The policy pays regard to the local context of the proposed minerals development which includes natural and man-made features, townscape and streetscape. As this can contribute to conserving the historic environment, a minor positive effect is likely on this SA objective. The policy is considered likely to have significant positive effects on Cultural ecosystem services.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	Developing an appropriate approach to the sustainable design and operation of minerals developments is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered likely to have negligible effects on Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	+	R +	The policy states that mineral development proposals including ancillary development must include measures that avoid or at least minimise greenhouse gas emissions which in turn would reduce air pollution. As such, a minor positive effect is identified. The policy is considered likely to have minor positive effects on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water	+	R +	The policy promotes maximising water efficiency which can protect water resources and the water environment as a whole. As such a minor positive effect is likely on this SA objective The policy is considered likely to have minor positive effects on Regulating

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
environment.			ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+	R +	<p>The policy requires mineral development proposals including ancillary development to include measures to ensure resilience and enable adaptation to a changing climate, which is likely to include flood risk management measures; therefore a minor positive effect is likely.</p> <p>The policy is considered likely to have minor positive effects on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>Developing an appropriate approach to the sustainable design and operation of minerals developments is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered likely to have a negligible effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	++	R ++	<p>The policy promotes low-carbon energy generation as well as stating that mineral development proposals including ancillary development must include measures that avoid or at least minimise greenhouse gas emissions. A significant positive effect is therefore identified on this SA objective.</p> <p>The policy is considered likely to have significant positive effects on Regulating ecosystem services.</p>

Policy M24: Restoration and Aftercare

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>The policy supports proposals that will provide high quality and practicable restoration and aftercare which could enhance the local amenity for residents and visitors to West Sussex. The policy also supports a phased restoration occurring at the earliest opportunity. As such a minor positive 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.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	+	C +	<p>The policy supports proposals that will re-route or reinstate Public Rights of Way which maximises recreational opportunities for all. A minor positive effect is therefore identified 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	N/A	<p>The policy supports proposals for mineral extraction and temporary minerals infrastructure development that are accompanied by comprehensive restoration schemes, including those that make provision for high quality and practicable restoration, management and aftercare. This may result in restoration schemes and after uses that benefit the local economy in the long term. Therefore, minor positive effects are expected on this SA objective. However, the effects are</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			uncertain as it will depend on the type of after uses that are proposed. Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	0	S -	The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	+?	C +?	The policy supports proposals that are appropriate for their locations and that maximise benefits taking into account local landscape character. 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. The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	P +? R +? C +?	The policy states that mineral extraction and temporary minerals infrastructure development proposals will be approved if they are appropriate for the locations, maximising benefits taking into account biodiversity, and wider environmental benefits. 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. The policy is considered likely to have minor positive uncertain effects on

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Provisioning, Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	?	C ?	<p>Through encouraging high quality restoration that is appropriate to the area, this policy contributes to protecting and conserving the geodiversity assets in West Sussex. However, the policy does not mention geodiversity in its wording and as such an uncertain effect is identified on this SA objective.</p> <p>The policy is considered likely to have uncertain effects on Cultural ecosystem services.</p>
8. To conserve, and where possible, enhance the historic environment.	+?	C +?	<p>The policy states that mineral extraction and temporary minerals infrastructure development proposals will be approved if they are appropriate for the locations, maximising benefits taking into account the historic environment. 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.</p> <p>The policy is considered likely to have minor positive uncertain effects on Cultural ecosystem services.</p>
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+?	R +?	<p>The policy encourages high quality restoration which could include the protection and possible enhancement of soil quality and reclamation of the best and most versatile land. The policy supports proposals that ensure that soil resources are conserved through both operation and the restoration of the minerals development. As such, a minor positive effect is likely on this SA objective.</p> <p>The effects however are uncertain as the effects would depend 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.</p> <p>The policy is considered likely to have uncertain minor positive effects on</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			Regulating ecosystem services.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	+?	R +?	<p>This policy may help protect water quality in West Sussex as it requires proposals for mineral extraction and temporary minerals infrastructure developments to be accompanied by comprehensive schemes that are of high quality and that take into account the local area and maximising biodiversity. Criterion (g) requires minerals workings to preserve the hydrogeological and hydrological conditions on the site so that there are no adverse impacts to the water quality onsite or elsewhere.</p> <p>Effects are currently uncertain because 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.</p> <p>The policy is considered likely to have uncertain minor positive effects on Regulating ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	R +?	<p>This policy may help reduce vulnerability to flooding in West Sussex as it requires proposals for mineral extraction and temporary minerals infrastructure developments to be accompanied by comprehensive schemes that are of high quality and that take into account wider environmental objectives. Reducing vulnerability to is specified in the policy wording flooding via criterion (g) and so a minor positive effect is currently expected. Effects are currently 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</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>preparation or even at the planning application stage.</p> <p>The policy is considered likely to have uncertain minor positive effects on Regulating ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	<p>The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>The restoration of quarries is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>

Policy M25: Community Engagement

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	+	N/A	<p>As mineral workings can impact local communities, this policy aims to protect local communities from adverse impacts of minerals development. The policy requires that proposals for minerals development will be permitted provided that, where necessary, a site liaison group is established by the operator to address issues arising from the operation of a minerals development or facility. Therefore, a minor positive effect is likely on this SA objective as this could protect the health, well-being and amenity of residents.</p> <p>Protection of health and well-being would be supported by all ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported by Provisioning Ecosystem services, but is unlikely to have a particular impact or benefit on ecosystem services.</p>
4. To conserve minerals resources from inappropriate development whilst providing	0	S -	<p>Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
for the supply of aggregates and other minerals sufficient for the needs of society.			effects are expected for this SA objective. Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C O	Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P O R O C O	Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Provisioning, Regulating and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C O	Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	0	C O	Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Regulating ecosystem services.</p>
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals development is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
the Lorry Route Network.			services.
14. To reduce the emissions of greenhouse gases.	0	R 0	<p>Ensuring that local communities are protected from the adverse impact of minerals is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered unlikely to have any effect on Cultural ecosystem services.</p>

Policy M26: Maximising the use of Secondary and Recycled Aggregates

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	0	N/A	<p>Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of health and well-being would be supported by all four of the categories of ecosystem services, but this policy is unlikely to have a particular impact or benefit on the ecosystem services.</p>
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces and Public Rights of Way (PROW).	0	C 0	<p>Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>The policy is considered likely to have a negligible effect on Cultural ecosystem services.</p>
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	0	N/A	<p>Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective.</p> <p>Protection of the local economy would be supported in particular by Provisioning ecosystem services, but is unlikely to have a particular impact or benefit on the ecosystem service</p>
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	++	S -	<p>This policy is likely to have a significant positive effect on this SA objective as supporting the use of secondary and recycled aggregate will reduce the extraction of virgin materials.</p> <p>Conserving minerals from inappropriate development to ensure sufficient minerals supply could have a negative impact on the Supporting ecosystem services, as minerals contribute to soil formation and nutrient cycling.</p>

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
5. To protect, and where possible, enhance the landscape, local distinctiveness and landscape character in West Sussex.	0	C 0	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. This policy is likely to have a negligible effect on Cultural ecosystem services.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0	P 0 R 0 C 0	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. A negligible effect is considered likely for this policy in relation to Provisioning, Regulatory and Cultural ecosystem services.
7. To protect and conserve geodiversity.	0	C 0?	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. The policy is considered unlikely to have any effect on Cultural ecosystem services.
8. To conserve, and where possible, enhance the historic environment.	0	C 0	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. This policy is likely to have a negligible effect on Cultural ecosystem services
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0	R 0	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. This policy is likely to have a negligible effect on Regulating ecosystem services.
10. To reduce air pollution and	0	R 0	Encouraging development proposals to maximise the use of secondary and

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
to protect and, where possible, enhance air quality.			recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. This policy is likely to have a negligible effect on Regulating ecosystem services.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0	R 0	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. This policy is likely to have a negligible effect on Regulating ecosystem services.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0	R 0	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. This policy is likely to have a negligible effect on Regulating ecosystem services.
13. To minimise transport of minerals by roads. Where road use is necessary, to reduce the impact by promoting use of the Lorry Route Network.	0	R 0	Encouraging development proposals to maximise the use of secondary and recycled aggregates is unlikely to affect this SA objective. Therefore, no effects are expected for this SA objective. This policy is likely to have a negligible effect on Regulating ecosystem services.
14. To reduce the emissions of greenhouse gases.	+?	R +?	This may have minor positive effects on greenhouse gas emissions as encouraging the use of secondary and recycled aggregates would support a reduction in primary aggregate extraction, which is an intensive industry that contributes to high levels of greenhouse gas emissions. However, at this stage in the planning process it is not possible to determine the impacts of the policy on its ability to help reduce emissions of greenhouse gases as it will depend on the proposals they are used to determine and how successfully they are implemented, which would not be known for new facilities until the planning

SA Objective	SA Score	Will achievement of the SA objective have a benefit or impact on particular ecosystem services?	Justification
			<p>application stage.</p> <p>This policy could have minor positive uncertain effects on Regulating ecosystem services.</p>