West Sussex County Council and South Downs National Park Authority
Joint Minerals Local Plan Single Issue Review

Regulation 19
Sustainability Appraisal Main Report

Prepared by South Downs National Park Authority
September 2019

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1. Introduction

1.1 This Sustainability Appraisal Report has been prepared by the South Downs National Park Authority (SDNPA) as part of the integrated Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) of the Soft Sand Single Issue Review (SSR) which will be included in part of the West Sussex and South Downs National Park Joint Minerals Local Plan (hereafter referred to as the JMLP) which was adopted in 2018.

1.2 This report supports the Single Issue Review Proposed Submission draft Regulation 19 document and it should be read in conjunction with that document.

1.3 The National Planning Policy Framework (NPPF) advises that planning authorities should produce Local Plans and that a series of separate Development Plan Documents should only be produced where justified. The Planning Inspector for the JMLP required the SSR to be carried out on adoption of the JMLP and the SSSR Reg19 will be the second stage in that process.

1.4 The preparation of the JMLP (2018) was 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 was also in accordance with the requirements of European Directive 2001/42/EC (known as the Strategic Environment Assessment, or SEA Directive). The SSR will follow the same processes and procedures although ultimately the SSR will form a new chapter of the JMLP and will not exist as a standalone document.

1.5 In relation to soft sand strategy, the Inspector of the JMLP was "unable to conclude that the approach to soft sand is justified and offers the most appropriate strategy, as I consider all the reasonable alternatives have not been considered or appraised in the SA". The Authorities have now assessed all reasonable alternative options for soft sand as part of the SSR and this SA has formed part of that process.

About Sustainability Appraisal and Strategic Environmental Assessment

1.6 The purpose of SA is to promote sustainable development by integrating sustainability considerations into the preparation and adoption of plans. This SA Report has been prepared to provide key stakeholders and members of the public with information on the process and the findings of the SA undertaken in preparing the SSR Reg19 document.

1.7 The 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 SSR for the JMLP) from the outset of its development.

1.8 Strategic Environmental Assessment (SEA) is also a statutory assessment process, required under the SEA Directive, 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). 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 considerations, extending to social and economic impacts. The Government's Sustainability

Appraisal guidance 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.

Scope of the JMLP and SSR

1.10 As mineral planning authorities, West Sussex County Council (WSCC) and the South Downs National Park Authority (SDNPA) ('the Authorities') are required to plan for a steady and adequate supply of minerals in accordance with paragraph 207 of the National Planning Policy Framework 2018 (NPPF).

1.11 The West Sussex Joint Minerals Local Plan (JMLP) was jointly prepared and adopted by the Authorities in July 2018. The Plan sets out strategic policies for a number of different types of mineral for the period to 2033 to ensure that a steady and adequate supply can be maintained.

Soft Sand Review

1.12 During the examination hearings of the JMLP in September 2017, the Planning Inspector raised concerns about the soft sand strategy. The Inspector suggested modifications prior to adoption of the JMLP: to delete references to planning for a declining amount of sand extraction from within the National Park; to replace Policy M2 with new wording, requiring the Authorities to undertake a review to address the shortfall in soft sand to the end of the JMLP plan period (2033); and to remove the proposed Ham Farm allocation from Policy M11.

1.13 This Single Issue Review (SSR) must consider the strategy for how the shortfall will be met and, as required, the potential need for allocating sites for soft sand extraction.

1.14 Preparation of the Single Issue Review (SSR) must be undertaken in accordance with the relevant legislation (including the Planning and Compulsory Purchase Act 2004 and Regulations) to ensure procedural and legal compliance. The Review must also be consistent with the National Planning Policy Framework (2018).

1.15 The SSR must commence within six months of adoption of the JMLP and be submitted to the Secretary of State within two years from the commencement of the review. The timetable for the SSR is set out in the statutory management plan, the West Sussex Minerals and Waste Development Scheme, and the SDNPA Local Development Scheme.

1.16 Once adopted, the SSR will integrate into the JMLP to provide an up-to-date and robust policy for Soft Sand. The SSR covers the following three key matters:

- The identified need for soft sand during the period to 2033;
- The supply strategy, that is, the options that can, either singularly or in combination, be used to meet any identified shortfall; and
- The identification of potential sites and, if required, the selection of one or more of those sites to meet identified need.

Aims and structure of the report

1.17 This report is the SA/SEA report for SSR Reg19 January 2020. 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'.

1.18 The remainder of this report is structured into the following chapters.

- Chapter 2 – Methodology, describes the stages of the SA process and the approach used for the specific SA tasks, including how reasonable alternatives have been identified and appraised.

- Chapter 3 – Sustainability Context for Minerals Development in West Sussex, summarise the SSR of the JMLP's relationship with other relevant plans, policy, and strategies, summarise the social, economic, and environmental characteristics of West Sussex, and identify 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 SSR of the JMLP.
- Chapter 5 – Assessment of Issues and Options, provides commentary and summarises the assessment tables that form Appendix 3 of this report. The assessment of Issues has been updated and the assessment of Options considers each potential combination of options in turn.
- Chapter 6 – Assessment of Sites, provides commentary and summarises the Site Assessment tables set out in Appendix 4 of this report. Site assessments have been updated to reflect updated technical evidence.
- Chapter 7 – Initial findings, brings the Options and Site Assessments together to inform the proposed strategy for the SSR.
- Chapter 8 – SA of proposed policy wording considers draft policies M2 and M11 and sets out how the SA process has influenced development of the policies.
- Chapter 9 – Monitoring, sets out how the monitoring of the SSR will be taken forward and Next Steps, sets out how the SSR and SA will progress.

1.19 As referred to above, there are also a number of supporting appendices:

- Appendix 1 Plans, Policies, and Programmes;
- Appendix 2 SA Assumptions and decision-making criteria;
- Appendix 3 SA Tables: Options A, B, C, D, E;
- Appendix 4 SA Tables: Issues and Revised Options (E1, E2, E3, E4, E5, E6);
- Appendix 5 SA Tables: Site Assessments;
- Appendix 6 Assessment of draft policies M2 and M11.

2. Methodology

Key stages in the SA/SEA process

2.1 In addition to complying with legal requirements, the approach being taken to the SA of the SSR for 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. Figure 1 below sets out the main stages of the plan-making process and shows how these correspond to the SA process.

2.2 Figure 2 signposts how the legal requirements of the SEA Directive have been met as set out in this SA Report.

Figure 1: Corresponding stages in plan making and SA

Local Plan Step	SA Stages and Tasks
Step 1: Evidence gathering and engagement	Stage A: Setting the context and objectives, establishing the baseline, and deciding on the scope. 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.
Step 2: Production of the Local Plan	Stage B: Developing and refining options and assessing effects. 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.
	Stage C: Preparing the Sustainability Appraisal Report. 1: Preparing the SA Report.
	Stage D: Seek representations on the Plan and the Sustainability Appraisal Report. 1: Public participation on Plan and the SA Report. 2(i): Appraising significant changes.
Step 3: Examination	2(ii): Appraising significant changes resulting from representations. 3: Making decisions and providing information.
Steps 4 & 5: Adoption and Monitoring	Stage E: Monitoring the significant effects of implementing the Plan. 1: Finalising aims and methods for monitoring. 2: Responding to adverse effects.

Figure 2: SEA Directive Requirements

SEA Directive Requirement	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 Appendix 1
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
c) The environmental characteristics of areas likely to be significantly affected.	Chapter 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 Appendix 1
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.	Chapter 3 Appendix 1
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, 6, 7, 8 Appendices of Assessments 2-6
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	Chapters 5, 6, 7, 8 Appendices of Assessments 2-6
h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	Chapter 2 Chapter 4 Assessment Tables
i) A description of measures envisaged concerning monitoring in accordance with Art. 10.	Chapter 9 (related to full SA of JMLP)
j) A non-technical summary of the information provided under the above headings.	A separate non-technical summary document will be published to accompany this SA report.

SEA Directive Requirement	Where covered in 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).	
Consultation: ▪ Authorities with environmental responsibility, when deciding on the scope and level of detail of the information which must be included in the environmental report (Art. 5.4).	Chapter 2 Consultation on revised scoping report carried out in late 2018
▪ Authorities with environmental responsibility and the public, shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme (Art. 6.1, 6.2).	Consultation will take place in early 2020
▪ Other EU Member States, where the implementation of the plan or programme is likely to have significant effects on the environment of that country (Art. 7).	Not applicable
Provision of information on the decision: When the plan or programme is adopted, the public and any countries consulted under Art. 7 must be informed and the following made available to those so informed: ▪ the plan or programme as adopted; ▪ a statement summarising how environmental considerations have been integrated into the plan or programme and how the environmental report of Article 5, the opinions expressed pursuant to Article 6 and the results of consultations entered into pursuant to Art. 7 have been taken into account in accordance with Art. 8, and the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and ▪ the measures decided concerning monitoring (Art. 9).	Will be carried out at the plan making stage indicated in Figure 1
Monitoring of the significant environmental effects of the plan's or programme's implementation (Art. 10).	Will be carried out at the plan making stage indicated in Figure 1
Quality assurance: Environmental reports should be of a sufficient standard to meet the requirements of the SEA Directive (Art. 12).	The Authorities have undertaken all work in accordance with the relevant parts of the SEA Directive

What has been involved in the SA process so far

Stage A: Scoping

2.3 The SA process for the JMLP began in 2014 with the production of a Scoping Report 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.

2.5 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.

2.6 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 into 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 2013, therefore, where relevant, it was updated and revised further to provide an appropriate focus in relation to the JMLP.

2.7 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.

2.8 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.

2.9 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 of the SA of the JMLP include updated versions of the review of relevant plans, policies, and programmes, and baseline information.

2.10 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. A further consultation with the statutory consultees on the SA Scoping Report was undertaken in September 2018 in preparation for the SSR I&O Consultation in January 2019. The statutory consultees confirmed the SA Scoping Report was fit for purpose subject to the updating of references to certain Plans, Policies, and Projects. These were incorporated into the following stages of the SA Report.

Stage B: Development and Refining Options Assessing Effects

2.11 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, for example, 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.

2.12 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 —

implementing the plan or programme; and

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

2.13 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, for example the NPPF, or are not within the geographical scope of the plan.

2.14 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.

Proposed Submission Draft JMLP (April 2016)

2.15 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);
- Potential Minerals Site Options.

2.16 WSCC and SDNPA 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 the SA for the JMLP 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 JMLP or discounted. The reasonable site options were presented in Appendix 7 (which also includes the appraisal findings for all of the site options).

Proposed Submission Draft JMLP (January 2017)

2.17 As a result of consultation responses received, the Authorities 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. 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 of that SA report.

SSR Issues and Options

2.18 The SA for the SSR prepared a high-level assessment of the proposed Issues, Options and Sites as guided by the original SA for the JMLP and the Inspector's report for JMLP.

Stage C: Preparing the SA Report

2.19 The JMLP 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.

2.20 Each policy option and site 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 3. (This is the same colour coding and symbol table carried forward to the SSR SA.)

2.21 The scoring was reviewed prior to the SA of the SSR Issues and Options (2019). No changes were made to the scoring system at that stage and the same scoring table has been used to assess all stages of the SA of the draft Pre-Submission Soft Sand Single Issue Review.

Figure 3: Key to symbols and colour coding used in the SA of the JMLP (and SSR)

Symbol	Likely Impact of the Policy on the SA Objective(s)
++	Significant positive impact
+	Minor positive impact
0	Negligible or no impact
+/-	Mixture of positive and negative
-	Minor negative impact
--	Significant negative impact
?	Uncertain what effect it will have

Stage D: Consultation

2.22 WSCC and SDNPA consulted on the SA, and options for soft sand, for the Regulation 19 Pre-Submission JMLP between January and March 2017. The SA for the SSR I&O was published for consultation between January and March 2019. This SA report is for the Pre-Submission SSR Reg19 consulted upon between January and March 2020.

Stage E: Monitoring

2.23 Stage E will follow adoption of the SSR. The SEA Regulations and the Government's SA Guidance require that the Sustainability Report includes a description of measures envisaged concerning monitoring. Monitoring related to the matter of soft sand is considered in Chapter 9 of this SA Report. The wider monitoring approach is discussed in Chapter 7 of the JMLP SA.

3. Summary of review of Plans, Policies, and Programmes

Review of Plans, Policies, and Programmes

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

"An outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes; and

(e) the environmental protection objectives, established at international, Community or Member State level which are relevant to the plan or programme and the way those objectives and any environmental considerations have been take account during its preparation."

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

3.3 The JMLP and SSR are not prepared in isolation, being greatly influenced by other plans, policies, and programmes and by broader sustainability objectives. It needs to be consistent with international and national guidance and strategic planning policies and should contribute to the goals of a wide range of other programmes and plans, such as 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.

3.4 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. Appendix I 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 I of this report identifies the relationship that the plans and policies have with the development of the JMLP (and SSR) 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, SSR and also the SA.

3.5 The most significant developments in terms of the policy context for the SSR are the adoption of the JMLP in 2018 which will provide a set of up-to-date development management policies for minerals development, the adoption of the South Downs Local Plan (2019) and the 2019 update to the NPPF.

3.6 The JMLP and SSR must be consistent with the requirements of the NPPF, which sets out information about the purposes of local plan-making. It states that:

"11. Plans and decisions should apply a presumption in favour of sustainable development.

For plan-making this means that:

a) plans should positively seek opportunities to meet the development needs of their area, and be sufficiently flexible to adapt to rapid change;

b) strategic policies should, as a minimum, provide for objectively assessed needs for housing and other uses, as well as any needs that cannot be met within neighbouring areas, unless:

i) the application of policies in this Framework that protect areas or assets of particular importance provides a strong reason for restricting the overall scale, type, or distribution of development in the plan area; or

ii) any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole".

3.7 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. Mineral extraction is considered to be 'major development' as defined in the Glossary of the NPPF and the Town and County Planning (Development Management Procedure) (England) Order 2015. Paragraph 172 of the NPPF states that planning permission should be refused for major development in national parks other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Footnote 55 of the NPPF states that the question of whether a development proposal is 'major' in a national park is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

3.8 While the NPPF 2012 replaced a number of former Minerals Policy Statements, the principles for minerals planning were retained and included in the NPPF 2018, most notably:

- 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.

3.9 A full list of the Plans, Policies, and Programmes is contained in Appendix 1.

Baseline Information

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

"The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme; and the environmental characteristics of areas likely to be significantly affected."

3.11 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 the overarching report SA report for the JMLP 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

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. Figure 4 describes the likely evolution of each key sustainability issue if the SSR of the JMLP were not to be adopted.

3.17 The table reflects the wider JMLP as the SSR will form part of the plan and is not a standalone document.

Figure 4: Key sustainability issues for West Sussex and the likely evolution of the environment in the absence of the JMLP and the SSR

No.	Key Sustainability Issues	The likely evolution of the environment in the absence of the JMLP and SSR
1	Poor health in some areas. 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.	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.
2	Lower employment levels. In 2015, 82.6% of residents that were of working age were employed, with 4.3% of residents unemployed. 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%.	In the absence of the JMLP, employment in the minerals sector within West Sussex may further decrease.
3	Difficulties in terms of protecting West Sussex's environment whilst providing minerals needed by society. 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.	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.
4	Declines in condition status of West Sussex's biodiversity. Overall, the county has lost 28% of the seminatural 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' condition.	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.

No.	Key Sustainability Issues	The likely evolution of the environment in the absence of the JMLP and SSR
5	Changes in landscape character and tranquillity. 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 changes in landscape character in the County and plans should endeavour to avoid or minimise impacts as much as possible. The percentage of landscape classified as tranquil has reduced since 1960 when it was 69%, to 35% in 2007.	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 development.
6	Potential for damage to the historic environment 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.	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	Climate change: warmer, wetter winters; drier summers, increase in flash flooding. 134 extreme weather events between 1998 and 2008 in West Sussex. In the South East, it is estimated that in 2050, the winter mean temperature will rise by 2.5°C and the summer mean temperature will rise by 3.1°C.	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	Increases in greenhouse gas emissions. UK Greenhouse gas emissions: 22.9 million tonnes (mt) from HGVs (2012 data).	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	Potential for flooding. Certain areas in West Sussex are becoming more vulnerable and prone to coastal, fluvial, groundwater and surface water flooding. Currently 12.6% of West Sussex is within a flood plain.	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.

No.	Key Sustainability Issues	The likely evolution of the environment in the absence of the JMLP and SSR
10	Water Quality. The water quality within the County is not yet meeting 'good' ecological status in regards to the EU Water Framework Directive. Only 19% of water bodies within the County have good ecological status. 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.	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 or poorly planned minerals development.
11	Air Quality. The number of Air Quality Management Areas has increased from 5 in 2008 to 10 in July 2015.	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.
12	Traffic Growth. 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 places. Increased traffic could have a detrimental effect on quality of life within the County.	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.

4. SA Framework

The SA Framework

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 was developed by LUC, SDNPA and WSCC's Minerals and Waste Planning Policy officers for the SA of the JMLP. 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 1) and baseline situation/key issues described in Chapter 3 of this report and Appendix 3 of the SA Report of the JMLP. The SA objectives developed for the SDNP Local Plan have also been taken into consideration.

4.4 The policies and sites allocations included in the Issues and Options document for the SSR (2019) have been appraised against the SA Objectives, which are included in Figure 5 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 and SSR.

Figure 5: Subsidiary questions for each SA Objective

Effect	SA Objective	Subsidiary Questions
Social	1. To protect and, where possible, enhance health, wellbeing, and amenity of residents, neighbouring land uses and visitors to West Sussex.	Would the option/policy/site: ▪ 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, wellbeing, and amenity through enhancements? ▪ Create cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential?
Social	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).	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)?
Economic	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?

Effect	SA Objective	Subsidiary Questions
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?
Environmental	6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	Would the option/policy/site: ▪ 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?
Environmental	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?

Effect	SA Objective	Subsidiary Questions
Environmental	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?
Environmental	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?
Environmental	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?
Environmental	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?
Environmental	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? ▪ Provide opportunities for flood alleviation/mitigation?
Environmental	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?

Effect	SA Objective	Subsidiary Questions
Environmental	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)?

Assumptions used in applying the SA Framework

4.5 SA inevitably relies on an element of subjective judgement. In predicting and assessing the likely sustainability effects of the JMLP and SSR, 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.

4.6 In making SA judgements for the appraisal of each issue, option, and site the SA builds on the extensive data collated and the assessments produced by WSCC and SDNPA for each site and the JMLP.

4.7 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 2) with the purpose of providing a consistent approach to the prediction and assessment of effects. The decision-making criteria relates specifically to the assessment of the potential sites being considered at this stage for allocation in the SSR 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, will provide a framework to draw on the updated technical assessments that will be 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 2, 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.

4.8 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 and the relevant Local Plans at the planning application stage.

5. Assessment of Issues and Options

Issue 1: Identified need for soft sand during the period to 2033

5.1 Mineral planning authorities (MPAs) are required to prepare a Local Aggregates Assessment (LAA) that identifies future demand for aggregates, including soft sand, based on historic sales and other relevant local information. Therefore, the LAA provides the basis for making provision for land-won aggregates through Local Plans.

5.2 There were no soundness or legal compliance issues raised through the examination of the JMLP with regards to the forecast for aggregates. As the approach taken within the LAA was considered to be sound, the Authorities have prepared an updated version of the LAA to continue to monitor the situation with regards to aggregate supply and the performance of the JMLP, and to provide information about the amount of soft sand that is required to 2033.

5.3 The LAA sets out the demand for soft sand to 2033, taking account of the previous 10 years sales (2008–2017), and the following assumptions:

- Assumption 1: the construction of new residential dwellings in West Sussex is projected to grow by 26.8%
- Assumption 2: Up to 91% of sand and gravel may be used in the construction of residential dwellings

5.4 Policy M2 of the submission JMLP identifies a shortfall of soft sand of 2.36 million tonnes (mt) at the time of the examination hearings. The level of need is reassessed by the Authorities on an annual basis as part of the Local Aggregates Assessment as the first part of this Review and, as set out in page 10 of the Issues and Options consultation document.

5.5 Using the 10-year sales average and a combination of the assumptions above, it is calculated that there is a shortfall of between 1.66 and 2.83 million tonnes (mt) to 2033. When preparing the JMLP, the Authorities approach was to plan for the highest demand scenario, to ensure that sufficient provision is made for a steady and adequate supply of soft sand over the Plan period. Any fluctuations in the 10-year or 3-year averages, or the demand scenarios, will be picked up on an annual basis and could trigger a Plan Review.

Summary

5.6 The issue of supply has not changed substantially from that set out in the JMLP (2018) and therefor the SA has been carried forward from the JMLP. The assessment of Issue 1 is set out in Appendix 3 of this report.

Issue 2: Supply strategy

5.7 The only source of land-won soft sand within West Sussex is within the Folkstone Formation, which is largely contained within the South Downs National Park. Paragraph 172 of the NPPF states "that great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks … which have the highest status of protection in relation to these issues".

5.8 The statutory purposes and duty for national parks are set out in the National Park and Access to the Countryside Act 1949 as amended by the Environment Act 1995.

5.9 The National Park purposes are:

- To conserve and enhance the natural beauty, wildlife and cultural heritage and special qualities of the National Park;

- To promote opportunities for the understanding and enjoyment of the special qualities of the National Park by the public.

5.10 The National Park Authority also has a duty when carrying out the purposes, to seek to foster the economic and social well-being of the local communities within the National Park.

5.11 In addition, Section 62 of the Environment Act 1995 requires all relevant authorities, including statutory undertakers and other public bodies, to have regard to these purposes; this includes West Sussex County Council. For the SSR, this means that assessment of the potential sites outside of the SDNP boundary will also be considered for their potential impact on the National Park.

5.12 Mineral extraction is considered to be 'major development' as defined in the Glossary of the NPPF and the Town and County Planning (Development Management Procedure) (England) Order 2015. Paragraph 172 of the NPPF states that planning permission should be refused for major development in national parks other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Footnote 55 of the NPPF says that the question of whether a development proposal is 'major' in a national park is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

5.13 Paragraph 172 of the NPPF relates primarily to the determination of planning applications. However, to ensure that all local plan allocations are deliverable, it is also necessary to consider the issue of major development at the plan making stage. All potential allocations for soft sand in the National Park will need to address paragraph 172 of the NPPF and draft policy SD3 of the emerging South Downs Local Plan.

5.14 With regard to plan-making, paragraph 207 of the NPPF requires that MPAs make provision for land-won aggregates in "the form of specific sites, preferred areas and/or areas of search and locational criteria as appropriate".

5.15 Against this national legislative and policy context, the Authorities have to consider all 'reasonable alternatives' for soft sand supply to meet the identified shortfall. 'Reasonable alternatives' are the available options to promote sustainable development, the likely significant effects of which are assessed through SA. The 'reasonable alternatives' should be identified at an early stage, in order to help develop the preferred strategy. The options below are considered to be the reasonable alternatives.

Summary of options

5.16 At the Issues and Options consultation this stage, the Authorities have identified the following options that could be used to meet the identified shortfall for soft sand:

- Option A: Supply from sites within West Sussex but outside of the National Park;
- Option B: Supply from sites within West Sussex, including within the National Park;
- Option C: Supply from areas outside West Sussex;
- Option D: Supply from alternative sources including marine-dredged material; and
- Option E: A combination of the above options.

5.17 The options and summary of the SA assessment are set out in Figure 6 below. The full assessment of Options A-D are set out in Appendix 3. Issue 3 'The identification of potential sites and, if required, the selection of one or more of those sites to meet identified need' is considered in Chapter 7 Site Selection Process.

Figure 6: Summary assessments of SSR Options A to E

Option	Summary of Option	Summary of SA Assessment
Option A: Supply from sites within West Sussex but outside of the National Park	There are a number of currently active soft sand sites within West Sussex that fall outside the boundary of the SDNP. The Authorities also undertook a full desk-based assessment to assess whether there were any other potential sites that had not been promoted by landowners or operators when work on the JMLP was underway. In assessing Option A, the Authorities will consider the potential to identify sites outside the SDNP boundary within West Sussex the cumulative impact of any potential allocations with active sites in close proximity, and whether this option is able to meet the full supply requirement.	This option is unlikely to meet the supply requirements of the LAA. There would be a number of negative impacts including landscape and residential amenity. The location of potential sites outside of the SDNP are adjacent to the SDNP boundary as well as existing and historic mineral workings. Further assessment on the impact of this option on the SDNP is required. This option has the most cumulative impacts due to the location of current mineral workings. It should be noted that sites outside but in close proximity to, or experienced (for example, via views) from, the National Park have the potential to adversely impact on the landscape, including the setting and experiential qualities, of the National Park.
Option B: Supply from sites within West Sussex, including within the National Park	This option will consider the potential of each site on the 'shortlist' (see Issue 3, below) on its merits. Landscape assessments will consider the potential impact on the special qualities of the South Downs National Park regardless of whether the site is within or outside the National Park.	This option may meet the supply requirements set out in the LAA. There would be a number of negative impacts including landscape and residential amenity. The location of potential within and adjacent to the SDNP boundary means that further assessment on the impact of this option on the SDNP is required. It should be noted that sites outside but in close proximity to, or experienced (for example, via views) from, the National Park have the potential to adversely impact on the landscape, including the setting and experiential qualities, of the National Park.
Option C: Supply from areas outside West Sussex	Option C considers the potential of other Plan Areas to supply the wider market in the South East to compensate for any shortfall in supply from West Sussex, due to the constrained nature of the resource. Outside of this Plan Area, there are a number of counties that already supply soft sand to the wider market from the Folkestone Formation, as well as the Corallian Group (in Oxfordshire), and the 'Reading Beds'.	Seeking supply solely from areas outside of West Sussex increases uncertainty of the potential impacts and reduces control on impacts such as air quality. The nature of the minerals market means that soft sand will currently be transported through the Plan Area so some impacts may be neutral, depending on the origin of the material.

Option	Summary of Option	Summary of SA Assessment
Option D: Supply from alternative sources including marine dredged material	This option seeks to meet supply from alternative materials to land-won resources within the Plan Area. There are currently no known viable equivalents to land-won building sand in the South East. Marine dredged material is increasingly supplied to the market but is not known to be directly substitutable for land won resource at this time. There is evidence that some marine dredged material is being landed at wharves in West Sussex and sold as soft sand, but it is not known if this material is being blended with other, land-won sand, or is a direct substitute. The SSR will consider this Option in the context that this type of material may become more accessible and available over time, and an economically viable alternative to land-won soft sand extraction. However, this would be entirely dependent on the industry and market.	The SA considers that Option D is the most uncertain, particularly in the early stages of the Plan. It is unclear at present what amount of alternative material could be provided and where it would be sourced from. Although there could be less direct impacts on the landscape and biodiversity within West Sussex including the South Downs National Park, it is difficult to quantify likely that the transport impacts and also therefore impacts on climate change. It is unlikely that this option on its own could meet the supply required for the Plan period.
Option E: Combination of Options A-D	Option E was identified in the previous stage of SA as likely to be the most sustainable option. It will be difficult for any single option to meet the supply requirements set out in the most recently adopted LAA. Unless the Authorities decide not to meet the supply requirements, a combination of the options may be the most sustainable way to meet the requirements of national policy. All the potential combinations of Option E is considered below.	

Summary of assessment of options E1, E2, E3, E4, E5, and E6

5.18 Through the Issues and Options assessments, Option E was considered to be the most sustainable overall. Option E is made up of each of the Options A to D. As such there are a number of potential combinations to assess.

5.19 Firstly, the options have been grouped spatially:

- Combinations with Option A (Sites in West Sussex but outside of the SDNP);
- Combinations with Option B (Sites in West Sussex, including the SDNP).

5.20 Option A was then assessed in combination with:

- Option C (Supply from areas outside West Sussex);
- Option D (Supply from marine or other sources);
- Option C and Option D.

5.21 Separately, Option B was assessed in combination with:

- Option C (Supply from areas outside West Sussex);
- Option D (Supply from marine or other sources);
- Option C and Option D.

5.22 The combination of options to be considered is set out as follows.

Figure 7: Variations of Option E

Option	Variation of Option E
A: Inside West Sussex excluding the SDNP	**E1:** A plus C – Supply from areas outside West Sussex
	E2: A plus D – Supply from alternative sources including marine dredged material
	E3: A plus C and D (all combinations outside of the SDNP)
B: Inside West Sussex including the SDNP	**E4:** B plus C – Supply from areas outside West Sussex
	E5: B plus D – Supply from alternative sources including marine dredged material
	E6: B plus C and D (all combinations including inside the SDNP)

Option A (Supply from within West Sussex but outside of the SDNP)

5.23 Option A has not changed since the initial assessment in the table above. There are two potential sites to deliver this option: Ham Farm and Buncton Manor Farm. An assessment of the potential sites to deliver the preferred option is set out in Chapter 6.

E1 (E-A plus C – Supply from areas outside West Sussex)

5.24 In assessing E1, the SA has taken account of the work prepared of the South East Mineral Planning Authorities in relation to the Position Statement on Soft Sand, as well as the Statement of Common Ground the Authorities have prepared with Kent County Council and East Sussex County Council. There is still a high degree of uncertainty about how much material is available in the wider south east region and where such material might travel. It is entirely conceivable that some material will travel from Kent to West Sussex (and vice versa) as indicated by research that ESCC has prepared jointly with the SDNPA and BHCC

in preparation of the Review of the East Sussex, South Downs and Brighton and Hove Waste and Minerals Plan.

5.25 This combination of options slightly increases the deliverability of the strategy however the uncertainly in relation to how much material may be available is high. Policies M2, M11, and future reviews of the JMLP should take account of the changing position of the availability and constraint on material in the wider South East.

E2 (E-A plus D – Supply from alternative sources including marine dredged material)

5.26 In assessing E2, the SA has taken account of the information provided by the Crown Estate and others who made representations to the Issues and Options consultation. There is evidence that some marine material may be blended to provide a substitute for soft sand in very limited cases. The material involved is likely to be dredged from the Bristol Channel and would need to travel a long distance to reach West Sussex. At this time, it is not considered that the seabed off the South Coast offers the same potential. Although there may be potential in the future there is unlikely to be infrastructure in place to support the exploration of this potential until much later in the Plan period. Dredging of any viable material from the sea would also be subject to sustainability and environmental assessments.

5.27 This combination of options slightly increases the deliverability of the strategy however uncertainty in relation to how much material may be available to meet the need as set out in Issue 1 is high. Policies M2, M11, and future reviews of the JMLP should take account of the potential of material to be dredged from the south coast.

E3 (E-A plus C and D (all combinations outside of the SDNP))

5.28 This combination of options slightly increases the deliverability of the strategy and reduces some of the uncertainty in relation to how much material may be available to meet the need as set out in Issue 1. All options that rely on material solely from outside of the SDNP increase uncertainty of supply and potential environmental impacts. Policies M2, M11, and future reviews of the JMLP should take account of the potential of material to be dredged from the south coast.

Option B (Inside West Sussex including the SDNP)

5.29 B has not changed since the initial assessment in Appendix 3. The potential sites to deliver this option are set out in the site assessment section below Chapter 6.

E4 (E-B plus C – Supply from areas outside West Sussex)

5.30 In assessing Option E4, the SA takes account of the limited availability of sites solely within West Sussex and outside of the SDNP. There are a number of sites within the SSR I&O shortlist within the SDNP, so it is reasonable to assume that there is flexibility in identifying the sites that are the most sustainable.

5.31 There is still a high degree of uncertainty about how much material is available in the wider south east region and where such material might travel. It is entirely conceivable that some material will travel from Kent to West Sussex (and vice versa) as indicated by research that ESCC has prepared jointly with the SDNPA and BHCC in preparation of the Review of the East Sussex, South Downs and Brighton and Hove Waste and Minerals Plan which is currently being prepared.

5.32 This combination of options slightly increases the deliverability of the strategy and reduces some uncertainty in relation to how much material may be available. Policies M2, M11, and future reviews of the JMLP should take account of the changing position of the availability and constraint on material in the wider South East.

E5 (E-B plus D – Supply from alternative sources including marine dredged material)

5.33 In assessing Option E5, the SA takes account of the limited availability of sites solely within West Sussex and outside of the SDNP. There are a number of sites within the SSR I&O shortlist within the SDNP, so it is reasonable to assume that there is flexibility in identifying the sites that are the most sustainable.

5.34 The SA has taken account of the information provided by the Crown Estate and others who made representations to the Issues and Options consultation. There is evidence that some marine material may be blended to provide a substitute for soft sand in very limited cases. The material involved is likely to be dredged from the Bristol Channel and would need to travel a long distance to reach West Sussex. At this time, it is not considered that the seabed off the South Coast offers the same potential. Although there may be potential in the future there is unlikely to be infrastructure in place to support the exploration of this potential until much later in the Plan period. Dredging of any viable material from the sea would also be subject to sustainability and environmental assessments.

5.35 This combination of options slightly increases the deliverability of the strategy and reduces some uncertainty in relation to how much material may be available. Policies M2, M11, and future reviews of the JMLP should take account of the changing position of the viability of marine material.

Preferred Option

E6 (E-B plus C and D (all combinations including inside the SDNP))

5.36 This combination of options increases the deliverability of the strategy and reduces the uncertainty in relation to whether sites are deliverable and how much material may be available. Policies M2 and M11 and future reviews of the JMLP should take account of the availability of material in the wider south east and the potential of material to be dredged from the south coast.

6. Assessment of Sites

6.1 Issue 3 concerns concerned the identification of sites to meet the supply identified in Issue 1 and the strategy identified in Issue 2. As two of the supply options relate to the allocation of sites within the Plan Area, the Authorities have undertaken work to identify potential sites to meet identified supply requirements to 2033. Following the Issues and Options (2019) consultation the Authorities revised all the pertinent technical assessments, including:

- HRA;
- Transport Assessment;
- Landscape Assessment;
- Site Selection Report (4SR).

6.2 In total, 21 possible sites for extraction were identified at 'Stage 1' of the Site Selection Report. The sites on this 'long list' have all been considered in the past. The sites on the long list were reviewed and 12 of them were considered to be unsuitable for further consideration (see Appendix 3 of the 4SR).

6.3 The remaining nine sites have been shortlisted and have been subject of a 'Stage 2' assessment, taking account of all previous evidence and any new evidence that has been submitted as part of the 'Call for Sites' and in response to the Issues and Options consultation (2019). Figure 8 identifies the nine potential sites, including specific information about their location, size, yield, and nature, and whether they are new sites or extensions to existing sites.

Figure 8: Summary of Sites

Site Name	Parish	Site (Ha)	Yield (tonnes)	In SDNP?	Extension to existing site?
Buncton Manor Farm (new site)	Washington	23	1,000,000	No	No
Chantry Lane (extension)	Storrington and Sullington	2.5	1,000,000	Yes	Yes
Coopers Moor (extension)	Duncton	6	500,000	Yes	Yes
Duncton Common (extension)	Duncton and Petworth	28	1,800,000	Yes	Yes
East of West Heath Common (extension)	Harting and Rogate	16	1,000,000	Yes	Yes
Ham Farm (new site)	Steyning and Wiston	8.2	725,000	No	No
Minsted West[1] (extension)	Stedham with Iping	10	2,000,000	Yes	Yes
Severals East[2] (new site)	Wiston	20	1.7 million	Yes	No
Severals West (new site)	Wiston	50		Yes	No

[1] Minsted West is no longer considered a functional extension due to the uncertainty around the existing site.

[2] Severals East and West are now being promoted together by the potential site operator.

Figure 9: Summary of site assessment scoring – refer to Figure 3 on page 13 for a key to the symbols and colour coding

SA Objective	Buncton Manor Farm	Chantry Lane	Coopers Moor	Duncton Common	East of West Heath	Ham Farm	Minsted West	Severals East	Severals West
1. To protect and, where possible, enhance health, well-being and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?	0/-?	0/-?	0/-?	0/-?	0/-?	0/-?	0/-?	0/-?
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	0	-	+?	-?	-	--?	--?
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	+	+	+	+	+	+	+	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+	+	+	+	+	+	+	+	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--	-	--	--	-	-	--	--	--
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	0	-?	--?	-?	-?	--?	--?	--?
7. To protect and conserve geodiversity.	0	-?	0	0	0	0	-?	0	0
8. To conserve, and where possible, enhance the historic environment.	--?	-?	--?	--?	-?	-?	--?	-?	-?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	0	0	0	0	--	-	0	0
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	-?	-?	-?	-?	-?	-?	-?	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	?	-	--?	?	?	-	--?	--?
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	-?	0?	-?	-?	-?	0?	-?	-?	-?
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	-	-	--	--
14. To reduce the emissions of greenhouse gases.	-?	-?	-?	-?	-?	-?	-?	-?	-?

Figure 10: Summary of site assessments

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Buncton Manor Farm	N	The site is currently in agricultural use and would yield approximately 1m tonnes of soft sand. It would be worked over a period of 10-15 years. There are a number of restoration options available.	High landscape sensitivity Impact on ancient woodland and listed buildings High and Medium risk of groundwater flooding and impact on aquifer Impact on AQMA Loss of agriculture Access Adjacent to landfill and nearby residential Cumulative impact	Buncton Manor is one of the sites likely to have the most severe cumulative impact, including transportation. It is highly visible within the landscape, particularly from Chanctonbury Ring, although the site itself is outside of the SDNP. There is potential for negative impact on PROW and soils.
Chantry Lane	E	The site would be an extension to existing workings and could yield approximately 1m tonnes of soft sand. There are a number of restoration options available that were considered in the West Sussex Landscape Capacity Study 2011.	Medium/high landscape sensitivity Adjacent to SSSI and RIGS Uncertain archaeological impacts Minimal impact on water environment AQMA Agricultural land Moderate transport impact	Chantry Lane may be slightly less sensitive in terms of landscape but there are a number of designations and known heritage assets that may be impacted on without sensitive working of the site. As an extension to an existing quarry some of the impacts may be easier to minimise.
Coopers Moor	E	Extension to Heath End sandpit which could yield 500,000 tonnes of soft sand. The site is currently woodland (birch regeneration and chestnut coppice). Restoration to wetland or woodland/agriculture.	Unacceptable landscape impact Adjacent to SNCIs and within 2km of SAC/SSS Major harm to listed buildings Potential impact on groundwater and surface water flooding AQMA Low impact on soil and transport Residential Amenity	Although development of this site may have minimal impact on soils and transport, there would be unacceptable harm to the landscape, designated areas, and heritage assets.
Duncton Common	E	The site would be an extension to Heath End quarry and is currently formed of forestry and heathland. Restoration options include a mix of dry heath and wetland habitats.	Unacceptable landscape impact Severe harm to wet heathland, SNCI, BAP and SPA/Ramsar Potential major harm to SAM Potential impact on the water environment protection zone 2/3 AQMA Residential amenity Cumulative impact	Development of this site could not avoid an unacceptable landscape impact or severe harm to designated areas, heritage assets or the water environment.
East of West Heath Common	E	Extension to existing quarry (would be worked after existing extraction site is worked out). This site could yield 950,000 tonnes of soft sand. It is currently in agricultural use and could be restored for informal recreation uses, including links to the wider footpath network	Medium landscape sensitivity Nearby to a number of local and national designations Visual impact on SAM Major aquifer, part of site in FZ2/3b and high risk of groundwater flooding No AQMA impact No highway concerns Amenity impacts Cumulative impact	This site has a lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, water environment and cumulative impact. As an extension to an existing quarry the impacts may be easier to minimise.

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Ham Farm	N	The site is currently in arable use with a number of isolated residential properties in the surrounding area. The site could yield approximately 725,000 tonnes of soft sand and could be restored to agricultural use.	Medium high landscape sensitivity Minor harm to ancient semi-natural woodland Moderate harm to listed buildings Compatible with the water environment Medium AQMA impact Grade 3 soils Minimal transport impact Residential amenity	This site has a lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, amenity, and cumulative impacts. This site was considered acceptable for allocation in the Submission JMLP.
Minsted West	E[3]	The site is currently in agricultural use and could yield 2 million tonnes of soft sand. Potential restoration to nature conservation and heathland.	Medium/High landscape sensitivity National designations and potential hydrogeological impacts Within 200m of SAM Proximity to listed buildings and registered parks Moderate risk of groundwater flooding Impact on Iping Common SSSI Chichester AQMA Impact on residential amenity Cumulative impact (Severals E&W)	This site has a slightly lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, water environment and cumulative impact.
Severals East	N	The site is currently used for commercial forestry and could yield 1m tonnes of soft sand. Potential for restoration includes linking with Midhurst Common/the Serpent Trail.	Medium-High landscape sensitivity Priority habitat and ancient woodland Potential minor harm to listed buildings Lidar/Moderate mitigation levels Vulnerable water impacts AQMA Moderate transport impact Sensitive amenity receptors High cumulative impact	Although development of this site may have a lower impact on soils and transport, there would potentially be unacceptable harm to the landscape, designated areas, and heritage assets. The site has been promoted jointly with Severals West.
Severals West	N	The site is currently used for commercial forestry and could yield 1m tonnes of soft sand. Potential for restoration includes linking with Midhurst Common/the Serpent Trail.	Medium-High landscape sensitivity Severals Bog SINC Potential minor harm to listed buildings Vulnerable water impacts – high risk of groundwater flooding AQMA Moderate transport impact Sensitive amenity receptors High cumulative impact	Although development of this site may have a lower impact on soils and transport, there would potentially be unacceptable harm to the landscape, water environment, designated areas, and heritage asset. The site has been promoted jointly with Severals West.

[3] Minsted West is no longer considered a functional extension due to the uncertainty around the existing site.

7. Site Selection Process

Issue 3: The identification of potential sites and, if required, the selection of one or more of those sites to meet identified need

7.1 Following the SA of Need, Strategy and Sites as set out in the previous chapters, the SA considered the approach to choose the most sustainable sites. As the options include sites within the SDNP, the SA considers whether those sites can be considered 'a reasonable alternative' due to the potential additional constraints on developing those sites. The Authorities have prepared a Major Development Background Paper which assesses each site in the SDNP and sets out a framework for the assessment of major development in the context of the SDNP.

7.2 This is necessary in the context of the NPPF, which states in paragraph 172:

"Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas and should be given great weight in National Parks and the Broads[4]. The scale and extent of development within these designated areas should be limited. Planning permission should be refused for major development[5] other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:

- 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;
- the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and
- any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated."

7.3 Additional advice is given in Planning Practice Guidance, paragraph 005 Reference ID: 8-00520140306. This states:

"Planning permission should be refused for major development in a National Park, the Broads or an Area of Outstanding Natural Beauty except in exceptional circumstances and where it can be demonstrated to be in the public interest. Whether a proposed development in these designated areas should be treated as a major development, to which the policy in paragraph 172 of the Framework applies, will be a matter for the relevant decision taker, taking into account the proposal in question and the local context. The Framework is clear that great weight should be given to conserving landscape and scenic beauty in these designated areas irrespective of whether the policy in paragraph 172 is applicable."

7.4 The South Downs Local Plan (adopted July 2019) (SDLP) is also considered material. The SDLP explains that the NPPF does not define major development. The National Park Authority has sought legal opinions on what constitutes major development. These opinions are that the definition of "major development" is based on whether, prima facie,

[4] English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management, and other matters.

[5] For the purposes of paragraphs 172 and 173, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

the development might potentially have adverse impacts on a national park, rather than whether, after a careful and close assessment, it will have such adverse impacts.

7.5 As such, it is necessary at the plan-making stage to consider whether sites shortlisted for possible selection have the potential for adverse impacts on the South Downs National Park due to their scale, character or nature and are therefore considered to be major development for the purposes of plan-making. The consequence of failing to do so would be to risk allocating land for major development that was undeliverable in a National Park because it was contrary to both paragraph 172 of it was incapable of meeting the major development test in the NPPF, and Policy SD2 of the South Downs Local Plan. The major development test will also apply at the planning application stage, as set out in paragraph 172 of the NPPF and in Planning Practice Guidance.

7.6 The SA therefore considers the outcomes of the assessments of Issues, Options and Sites in the context above and the outcome of that assessment is set out below.

Looking for sites outside the SDNP in the first instance

7.7 National policy directs planning authorities to look for sites for non-energy minerals outside of designated landscapes in the first instance. The two sites put forward through the I&O 2019 are Ham Farm and Buncton Manor Farm. The Guiding Principle of the JMLP guide development towards site extensions before new sites.

- **First principle:** Places where there are opportunities to restore land beneficially, for example a net-gain in biodiversity.
- **Second principle:** Places without a sensitive natural or built environment and away from communities, in order to protect the amenity of businesses, residents and visitors to West Sussex.
- **Third principle:** the new sites should have good access to the Lorry Route Network (LRN). Access from the site to the LRN should be acceptable 'in principle', that is, there should not be any technical issues, with regard to highway capacity and road safety, that cannot be overcome.
- **Fourth principle:** The need to protect and enhance, where possible, protected landscapes in the plan area, particularly ensuring that any major minerals development will only be considered within designated landscapes in exceptional circumstances and in the public interest.
- **Fifth principle:** A preference for extensions to existing sites rather than new sites, subject to cumulative impact assessments.
- **Sixth principle:** The need to avoid the needless sterilisation of minerals by other forms of development.

7.8 Both Ham Farm and Buncton Manor Farm would form new sites. No extension sites were put forward outside of the SDNP for consideration through the Call for Sites.

Ham Farm

7.9 The 4SR considers that Ham Farm is still acceptable in principle following updates to all the relevant technical assessments. The HRA proposes that any development criteria for this site should include a requirement for a project level appropriate assessment.

Buncton Manor Farm

7.10 Although this site is outside of the SDNP, the 4SR and Landscape Assessment (2019) consider that the potential impact on the SDNP, particularly from the South Downs Way and Chanctonbury Ring would make this site unsuitable for allocation.

Material from other sources outside of the SDNP and marine won sand

7.11 As set out in Section 5, it is considered that at this time the availability of soft sand in the wider area and the embryonic state of the marine sand extraction industry mean that these materials may make a contribution to the soft sand market through the Plan Period but cannot be relied on at this time. In the absence of certainty at this time, the SA supports the view that considering allocation within the SDNP in the context of the Major Development Paper, is a reasonable alternative.

Sites within the SDNP

7.12 All the other sites considered in Section 7 are within the SDNP. Coopers Moor and Duncton Common have been ruled out due to the potential negative impacts set out in the SA assessments and the technical documents summarised in the updated 4SR.

7.13 The Guiding Principles direct the Authorities to extension sites before the consideration of new sites. Extension sites considered initially acceptable for consideration are Chantry Lane Extension, East of West Heath, and Minsted West. Severals East and West have been put forward together by the operator as one new site. It is now unclear if Minsted West can be considered an extension site due to ongoing negotiations at the existing Minsted Quarry.

Chanty Lane Extension

7.14 Chantry Lane may be slightly less sensitive in terms of landscape but there are a number of designations and known heritage assets that may be impacted on without sensitive working of the site. As an extension to an existing quarry some of the impacts may be easier to minimise. An allocation on this site should carefully consider the landscape impact, including the proposed access.

East of West Heath

7.15 This site has a lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, water environment and cumulative impact. As an extension to an existing quarry the impacts may be easier to minimise. A pipeline instead of a conveyor could be a more sensitive solution to convey material to the existing plant.

Minsted West

7.16 This site has a slightly lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, water environment and cumulative impact. It is unclear at this time how the proposed extension could function as an extension to the existing site. This increases the uncertainty of any potential impacts.

Severals East and West

7.17 Bringing the two sites forward together could ensure a holistic approach to development. Although development of this site may have a lower impact on soils and transport, there would potentially be unacceptable harm to the landscape, designated areas, and heritage asset.

Proposed Allocations

7.18 Taking account of the information in the updated technical evidence, sites were chosen where they are believed to have the least impact on the South Downs National Park.

Figure 11: Proposed Allocations

Location	Proposed Allocation	Not Allocated
Inside West Sussex, Outside of the SDNP	Ham Farm	
Inside West Sussex, Inside of the SDNP	East of West Heath (extension) Chantry Lane (extension)	Minsted West Severals East and West (new site)

7.19 Proposals to develop allocated sites in the SDNP, where they are determined to be major development, will need to demonstrate exceptional circumstances and that development of those sites is in the public interest. The Authorities have determined that these circumstances may exist due to constrained supply in the wider south east region, however, a decision can only be made when it is clear what the development proposals are and against the circumstances when the proposals come forward. The SA considers that the potential impacts of each site could be mitigated at the application stage and the development principles for each site should follow the recommendations of the technical assessments, including the requirement for project level appropriate assessment for each of the proposed allocations.

Cumulative impact of sites

7.20 The sites put forward for allocation are:

- Ham Farm
- East of West Heath
- Chantry Lane Extension

7.21 Two sites are in reasonable proximity (Ham Farm, Chantry Lane Extension) and one site is some distance away. The potential for cumulative impacts needs to consider existing minerals development as well as the impact of the combination of sites proposed.

7.22 There are existing quarry sites to the north of the A272 between Chantry Lane and Ham Farm. The SSR should consider how to minimise impacts on all SA objectives but particularly those relating to landscape, transport, air quality and amenity. The two extension sites will need to be carefully controlled through the planning application process to ensure that the impact of extended working in these areas is minimised. The extended working area does allow for greater potential in restoration schemes and greater impact on landscape projects in the wider area.

7.23 Traffic and air quality impacts of all development will need to be considered at the application stage. Although the SA and the technical assessments in support of the SSR consider the potential impacts at a plan making stage, some of the potential impacts can only be fully understood at the time a planning application is submitted. The SA recommends that any allocation policy considers the requirement for further information at the appropriate stage.

8. SA of Proposed Policy Wording

Background to policies and summary of appraisal

8.1 During the examination hearings of the JMLP in September 2017, the Planning Inspector raised concerns about the soft sand strategy. The Inspector suggested modifications prior to adoption of the JMLP: to delete references to planning for a declining amount of sand extraction from within the National Park; to replace Policy M2 with new wording; and to remove the proposed Ham Farm allocation from Policy M11.

8.2 Policy M2 required the Authorities to prepare a new strategy for soft sand in West Sussex which robustly considered reasonable options and potential site allocations. The Authorities are proposing to replace both Policy M2 and Policy M11 in the JMLP through the SSR as the strategy proposed new site allocations. Full appraisals of each policy are set out in Appendix 6.

Policy M2 recommendations

8.3 The SA assessments indicate that the most sustainable strategy is likely to be a combination of the options that allows for all potential sites and sources to come forward, where they are available, over the plan period. The SA recommends that Policy M2 clearly sets out a hierarchy of decision making, ensuring that sites only come forward in relation to the need at the time of the application and applicants are signposted to the NPPF requirement to seek sites outside of designated landscapes in the first instance. Policy M2 should be clear that sites allocated in Policy M11 have precedence over windfall sites and that sites should be well located to the Lorry Route Network if other modes of transport is not viable. The JMLP contains a number of DM policies which can control and ensure mitigation of any impacts from development and the policy should clearly reference this or provide further information in the supporting text. As the strategy allows for allocations in the SDNP, M2 should be clear that any application will be considered in the context of major development and applications outside of the SDNP also must assess the potential impact they would have.

8.4 The final proposed text for JMLP Policy M2: Soft Sand is set out below.

Figure 12: Draft Policy M2: Soft Sand

Policy M2: Soft Sand

(a) Proposals for land won soft sand extraction, including extensions of time and physical extensions to existing sites, will be permitted provided that:

i. The proposal is needed to ensure a steady and adequate supply of soft sand and to maintain at least a seven-year land bank, as set out in the most recent Local Aggregates Assessment; and

ii. The site is allocated within Policy M11 of this Plan, or if the proposal is on an unallocated site, it can be demonstrated that the need cannot be met through the site/s allocated for that purpose; and

iii. Where transportation by rail or water is not practicable or viable, the proposal is well-related to the Lorry Route Network.

(b) Proposals located outside the South Downs National Park that accord with part (a) must not adversely impact on its setting.

(c) Proposals located within the South Downs National Park that accord with part (a) and constitute major development will be refused other than in exceptional circumstances and where it can be demonstrated to be in the public interest.

Policy M11 recommendations

8.5 As stated above, the SA assessments indicate that the most sustainable strategy is likely to be a combination of the options that allows for all potential sites and sources to come forward, where they are available, over the plan period. Policy M2 incorporates a hierarchy of decision making and the SA recommendations set out above.

8.6 The requirements for M11 are assessed in this context. Policy M11 should be clear that sites will be assessed in the context of all policies within the JMLP, and other relevant policies in the development plan. The adopted policy includes a series of 'Development Principles' for the allocation at West Hoathly Brickworks. It is recommended that these are included of all soft sand allocations and that these follow the outcomes of the technical assessments and the HRA.

8.7 The final proposed text for JMLP Policy M11: Strategic Minerals Site Allocations is set out below.

Figure 13: Draft Policy M11: Strategic Minerals Site Allocations

M11: Strategic Minerals Site Allocations

(a) The following site is allocated for the extraction of clay for brick making and is acceptable, in principle, for that purpose:

  i. Extension to West Hoathly Brickworks (Policies Map 1)

(b) The following sites are allocated for soft sand extraction and are acceptable, in principle, for that purpose:

  i. Ham Farm, Steyning (Policies Map 8)

  ii. East of West Heath Common (Extension) (Policies Map 9)

  iii. Chantry Lane Extension (Policies Map 10)

(c) The development of the allocated sites 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.

(d) The allocated sites will be safeguarded from any development either on or adjoining the sites that would prevent or prejudice the development of its allocated minerals use or uses.

9. Monitoring

Background

9.1 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.

9.2 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 SIR and the uncertainty attached to many of the potential effects identified, the SA continues to use the previous monitoring framework prepared for the JMLP. Policies M2 and M11 include proposed monitoring frameworks for each policy and how any further policy reviews would be triggered.

9.3 The main SA report for the JMLP and the adopted JMLP set out a number of suggested indicators for monitoring the potential effects of implementing the JMLP. At this stage it is not proposed to update the indicators put forward as part of the adopted JMLP, except where required by the proposed indicators for policies M2 and M11. Indicators included in the supporting text for each policy are set out below for reference.

Figure 14: M2 Implementation and Monitoring

Actions	Key Organisations
▪ Annual monitoring of sand and gravel sales data from operators. ▪ Annual production of Assessment of Need for Aggregates (Local Aggregate Assessment).	▪ WSCC, SDNPA, minerals operators, South East England Aggregates Working Party.

Measure/Indicator	Trend/Target
▪ Soft sand sales ▪ Permitted soft sand reserve	Trends: ▪ Declining landbank within the South Downs National Park ▪ Soft sand continues to be adequately supplied to the construction industry in West Sussex.

Intervention Levels	Actions
▪ Lack of sites coming forward that are able to demonstrate exceptional circumstances	▪ Work with the Aggregates Working Party to monitor supplies of soft sand in the South East ▪ Review policy

Figure 15: M11 Implementation and Monitoring

Actions	Key Organisations
▪ Development management process	▪ WSCC, minerals industry
▪ Monitoring the 'take-up' of allocated sites through the AMR	▪ n/a

Measure/Indicator	Trend/Target
▪ Number of applications for minerals working on allocated sites permitted per annum.	▪ n/a
▪ Type of facilities permitted on allocated sites per annum	▪ In line with the requirements of the Plan area as set out in Policy M11

Intervention Levels	Actions
▪ A downward trend in applications on allocated sites (compared with applications on unallocated sites). ▪ Loss of allocations to non-minerals uses or use for minerals determined as being undeliverable.	▪

10. Next steps

10.1 This SA Report will be available for consultation alongside the Pre-Submission Draft SIR JMLP between January and March 2020.

10.2 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 SIR and check that the SA has been undertaken in accordance with the regulations and that the SIR has taken account of the SA as appropriate. The SA Report will be updated to reflect any changes the Authorities make to the SIR or changes that are made through the examination process.

Appendix 1: Review of relevant plans, policies, and programmes

International

EU Directives

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
SEA Directive 2001 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.
The Birds Directive 2009 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: ▪ 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.
The Habitats Directive 2017 (as amended) 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.
The Water Framework Directive 2000 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.
The Bathing Water Quality Directive 2006 Directive 2006/7/EC on protection of public health in bathing waters	The revised Bathing Water Directive entered into force in March 2006. The overall objective of the revised Directive remains the protection of public health whilst bathing.	There is a requirement for all bathing waters to be classed as 'sufficient' by 2015.	Plan must adhere to the requirements of the Directive, as appropriate.	Sustainability objectives should reflect the Directive requirements and protect the quality of bathing waters.
The Drinking Water Directive 1998 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.
The Air Quality Directive 2008 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.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
EU Management of Waste from Extractive Industries (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: ▪ Conditions for operating permits; ▪ General obligations concerning waste management; ▪ The obligation to characterise waste before disposing of it or treating it; ▪ Measures to ensure the safety of waste management facilities; ▪ A requirement to draw up closure plans; ▪ An obligation to provide for an appropriate level of financial security.	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.

European Plans, Policies, and Programmes

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
European Landscape Convention 2000	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.
EU Seventh Environmental Action Plan to 2020	The EU's objectives in implementing the programme are: ▪ To protect, conserve and enhance the Union's natural capital; ▪ To turn the Union into a resource-efficient, green, and competitive low-carbon economy; ▪ To safeguard the Union's citizens from environment-related pressures and risks to health and wellbeing; ▪ To maximise the benefits of the Union's environment legislation; ▪ To improve the evidence base for environment policy; ▪ To secure investment for environment and climate policy and get the prices right; ▪ To improve environmental integration and policy coherence; ▪ To enhance the sustainability of the Union's cities; ▪ To increase the Union's effectiveness in confronting regional and global environmental challenges.	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.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
Closing the Loop: An Ambitious EU Circular Economy Package 2019 (European Commission)	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.

Other International Plans, Policies, and Programmes

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
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.
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 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.	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.
IPCC's Fifth Assessment Report on Climate Change (IPCC, 2007)	To limit and/or reduce all greenhouse gas emissions which contribute to climate change.	None	Plan should support reduction in emissions of greenhouse gases.	Include sustainability 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: ▪ 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.

National

National Policies and Strategies

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
25-Year Environment Plan (DEFRA, 2018)	The 25-Year Environment Plan sets out government action to tackle a wide range of environmental pressures. The 25-Year Environment Plan identifies six areas around which action will be focused. These include: ▪ Using and managing land sustainably; ▪ Recovering nature and enhancing the beauty of landscapes; ▪ Connecting people with the environment to improve health and wellbeing; ▪ Increasing resource efficiency and reducing pollution and waste; ▪ Securing clean, productive, and biologically diverse seas and oceans; ▪ Protecting and improving the global environment.	Specific targets and indicators to be developed.	Develop policies that promote conservation and enhancements of the natural environment and ensure that site allocations take account of the goals of the Environment Plan.	Include sustainability objective that relates to the protection of the natural environment.
DEFRA (2010): English National Parks and the Broads UK Government Vision and Circular	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): England's statutory landscape designations: a practical guide to your duty of regard	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. 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 vision and objectives of the SDNP and AONB.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
National Planning Policy Framework (MHCLG 2019) The NPPG Guidance first published in March 2014, and regularly updated, contains more detailed guidance on mineral planning issues and can be found at GOV.UK.	▪ Presumption in favour of sustainable development. ▪ Building a strong, competitive economy. ▪ Meeting the challenge of climate change, flooding, and coastal change. ▪ Conserving and enhancing the natural environment. ▪ Conserving and enhancing the historic environment ▪ Facilitating the use of sustainable materials.	No targets or indicators.	▪ Development plan has a statutory status as the starting point for decision making. ▪ Set out clear economic visions for that particular area. ▪ Use opportunities offered by new development to reduce causes/impacts of flooding. ▪ Recognise the wider benefits of biodiversity. ▪ Sustain and enhance heritage assets and put them to viable uses consistent with their conservation. ▪ 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 or extensions of sites for peat extraction. ▪ Take account of the contribution that 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.	▪ SA 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. ▪ Include SA objectives relating to: ▫ strengthening the economy; ▫ climate change mitigation and adaption; ▫ conservation and enhancement of the natural environment; ▫ conservation of historic features; ▫ sustainable mineral extraction.
DEFRA (2011) Biodiversity 2020: A strategy for England's wildlife and ecosystem services	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: ▪ 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.

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DEFRA (2006) Natural Environments and Rural Communities Act – Section 41: List of Habitats and Species of Principal Importance in England 2008. The Conservation of Habitats and Species Regulations (2017) (as amended)	The lists have been prepared by the Secretary of State for Environment, Food and Rural Affairs as required under section 41(1) of the Natural Environment and Rural Communities (NERC) Act 2006. They identify the living organisms (species) and types of habitat which the Secretary of State considers are of principal importance for the purpose of conserving biodiversity in England. In accordance with section 41(2) of the NERC Act, the Secretary of State has consulted Natural England on the species and habitats to be included on the list. Under section 41(3) of the NERC Act the Secretary of State must take steps (where they are reasonably practicable), and promote the taking of steps by others, to further the conservation of the habitats and species on the list. In light of this duty, seven sectors have been identified where actions taken by public bodies and other stakeholders could deliver significant conservation benefits for habitats and species on the list. The 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.	The extensive lists of habitats and species are available on the DEFRA website. No targets or indicators specifically, or directly relevant to minerals plans.	The plan should further the conservation of the habitats and species on the list. Consider how the plan can contribute to meeting the regulations.	The SA Framework and particularly the SA Objectives and sub-objectives focusing on biodiversity should reflect the requirements of the NERC Act. Include sustainability objectives relating to protection of European sites.
DEFRA (2011) Securing the Future: Delivering UK Sustainable Development Strategy	Enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life for future generations. There are 4 shared priorities: ▪ Sustainable consumption and production; ▪ Climate change and energy; ▪ Natural resource protection and environmental enhancement; and ▪ Sustainable communities.	Sets out indicators to give an overview of sustainable development and priority areas in the UK. They include 20 of the UK Framework indicators and a further 48 indicators related to the priority areas.	Develop policies that meet the aims of the Sustainable Development Strategy.	Include sustainability objectives to cover the shared priorities of sustainable development.
Collation of the Results of the 2014 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 survey report 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, planning permission applications withdrawn or awaiting a decision, between 2010 and 2014, 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.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
Historic England (2008): Minerals Extraction and the Historic Environment	The document sets out Historic England position on mineral extraction and the high-level policies that will form the basis for responses and views put forward by Historic England on any matter relating to the winning, working and safeguarding of minerals. Although it was produced before the NPPF Historic England consider the document and a majority of the contents are still relevant. Its principal purpose is to guide the work of Historic England, 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 Historic England's formal policy on mineral extraction, including: ▪ Sustainability and supply; ▪ Safeguarding the industry's heritage; ▪ Impacts and mitigating of current and future extraction; ▪ Maintaining historic fabric and local distinctiveness.	No key targets (as yet).	Ensure Historic England's formal policy on mineral extraction is taken into account in the development of the SIR of the JMLP.	Include sustainability objectives that consider the impacts upon the historic environment.
Historic England (2008): Mineral Extraction and Archaeology: A Practice Guide	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, Historic England consider the document and a majority of the contents are still relevant. The principal purpose of this Practice Guide is to provide clear and practical guidance on the archaeological evaluation of mineral development sites. The guide seeks to ensure that: ▪ The best-informed decisions are made regarding the level of archaeological knowledge needed at each stage of the planning process; ▪ The use of the full range of up to date and appropriate investigative techniques is considered; ▪ There is consistency in planning authority responses, proportionate to the archaeological potential of the site and reasonable in all other respects.	No key targets (as yet).	Ensure the best practice is taken into account in the development of the SIR of the JMLP.	Include sustainability objectives that consider the impacts upon archaeology.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
DEFRA (2011): Marine Policy Statement	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 in line with the high-level marine objectives and thereby: ▪ 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. 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: ▪ 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 infrastructure on land and reflected in terrestrial development plans, and vice versa; and ▪ Sharing the evidence base and data where relevant and appropriate so as to achieve consistency in the data used in plan making and decisions.	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) contribute to the overarching Government objective of securing an adequate and continuing supply to the UK market for various uses. 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).	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 landed. Therefore, the SIR of JMLP 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.	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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The South Marine Plan (Marine Management Organisation 2018)	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'. The vision says that by 2038, the south marine plan areas will have maintained this distinctive natural beauty and diversity while sustainable economic growth, protection of the natural and historic environment, as well as the wellbeing of those who live, work, and visit the south coast, will have been enhanced through balanced and sustainable use of its resources.	In order to achieve its vision, this plan sets out 12 objectives which includes: ▪ Objective 11 – To complement and contribute to the achievement or maintenance of Good Ecological Status or Potential under the Water Framework Directive and Good Environmental Status under the Marine Strategy Framework Directive, with respect to descriptors for marine litter, non-indigenous species, and underwater noise. ▪ Objective 12 – To safeguard space for, and improve the quality of, the natural marine environment, including to enable continued provision of ecosystem goods and services, particularly in relation to coastal and seabed habitats, fisheries, and cumulative impacts on highly mobile species. These objectives address issues concerning the growth of industry in areas that could harm the natural marine environment.	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 vision and objectives and seek to protect the marine environment.
Climate Change Act 2008	The Climate Change Act 2008 introduced a statutory target of reducing carbon emissions.	Target of reducing carbon emissions by 80% 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 development.	Objectives should reflect the aims set in the Climate Change Act to reduce carbon emissions.

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DEFRA (2018) National Adaptation Programme: second national adaptation programme 2018 to 2023	The report sets out visions for the following sectors: ▪ Natural Environment: The natural environment with diverse and healthy ecosystems, is resilient to climate change, able to accommodate change, and valued for the adaptation services it provides. ▪ Infrastructure: An infrastructure network that is resilient to today's natural hazards and prepared for the future changing climate. ▪ People and the Built Environment: Buildings and places (including built heritage) and the people who live and work in them are resilient and organisations in the built environment sector have an increased capacity to address the risks and make the most of the opportunities of a changing climate. ▪ Business and industry: UK businesses are resilient to extreme weather and prepared for future risks and opportunities from climate change. ▪ Local Government: Local Government plays a central role in leading and supporting local places to become more resilient to a range of future risks and to be prepared for the opportunities from a changing climate. And includes a detailed action log in Annex 2.	No targets or indicators.	Policies should take account of the aims of the Programme.	Include objectives which seek to promote the implementation of adaptation measures to make the area more resilient to a changing climate.
HM Government (2017) The Clean Growth Strategy	Under the Climate Change Act, the Government is required to publish a set of policies and proposals that will enable the legally-binding carbon budgets, on track to the 2050 target, to be met. The Clean Growth Strategy sets out a range of policies and proposals, as well as possible long-term pathways for UK emissions in two ways – by decreasing emissions and by increasing economic growth.	The strategy covers the fourth and fifth carbon budgets, spanning 2023-2027 and 2028-2032, by when the UK must cut its greenhouse gas emissions to 57% below 1990 levels.	Promote energy efficiency and the use of appropriate renewable or lower carbon energy sources on site.	Include a sustainability objective relating to promoting energy efficiency and the use of appropriate renewable or lower carbon energy sources on site.
HM Government (2009): The UK Low Carbon Transition Plan	Plan plots how the UK will meet the 34% cut in emissions on 1990 levels by 2020. The Plan shows how reductions in the power sector and heavy industry; transport; homes and communities; workplaces and jobs; and farming, land and waste sectors could enable carbon budgets to 2022 to be met.	The plan includes a 5-point Action Plan covering the following areas: ▪ Protecting the public from immediate risk; ▪ Preparing for the future; ▪ Limiting the severity of future climate change through a new international climate agreement; ▪ Building a low carbon UK; ▪ Supporting individuals, communities, and businesses to play their part.	Plan should include policies that contribute towards achieving lower carbon emissions.	Objectives should reflect the aims set in the UK Low Carbon Transition Plan to reduce carbon emissions.
HM Government (2011): Carbon Plan: Delivering our low carbon future	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.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
DEFRA (2019) Clean Air Strategy	Sets out objectives and actions for tackling all sources of air pollution.	None	Ensure that site allocations and policies will contribute to maintaining and improving air quality.	Include sustainability objectives to protect and improve air quality.
DEFRA and DfT (2017) Improving air quality in the UK: tackling nitrogen dioxide in our towns and cities: UK Air Quality Plan for tackling nitrogen dioxide	The Plan provides an overview of actions that the UK Government plans to take to achieve reduction of harmful air pollution, particularly nitrogen dioxide. Proposes reducing air pollution is via charging Clean Air Zones (CAZs) – areas in which emission standards determine whether a vehicle's owner must pay a charge to enter.	None	Ensure that site allocations and policies will contribute to maintaining and improving air quality.	Include sustainability objectives to protect and improve air quality.
DEFRA (2007) The Air Quality Strategy for England, Scotland, Wales, and Northern Ireland	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(2007): A Strategy for England's Trees, Woods, and Forests	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. Protect and enhance the environmental resources of water, soil, air, biodiversity, and landscapes (both woodland and non-woodland), and the cultural and amenity values of trees and woodland. Increase the contribution that trees, woods, and forests make to the quality of life for those living in, working in, or visiting England. Improve the competitiveness of woodland businesses and promote the development of new or improved markets for sustainable woodland products and ecosystem services where this will deliver identifiable public benefits, nationally or locally, including the reduction of carbon emissions.	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.	Plan should promote the sustainable management of our existing woods and forests. Plan should, where appropriate, seek a steady expansion of woodland areas to provide more benefits for society and our environment.	Consider inclusion of objectives to promote sustainable management of our existing woods and forests. Consider inclusion of objectives which aim to promote the expansion, enjoyment and understanding of woodland areas.
Flood and Water Management Act 2010	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.
DEFRA Groundwater Protection Collection (current documents 2016-2018)	A series of ground water protection guides covering requirements, permissions, risk assessments and controls (previously covered in GP3 guidance) with an objective to prevent pollution of ground water.	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 minerals development	Include objective to protect groundwater quality.

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JNCC (2011) The Geological Conservation Review in the Context of the Wider Earth Heritage Conservation Effort	To identify and describe the most important geological sites in Britain by: 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.

White Papers

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
Natural Environment White Paper, 2011 The Natural Choice: securing the value of nature (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 Water for Life	Objectives of the White Paper are to: ▪ 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; ▪ 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.	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.
Rural White Paper 2000, Our Countryside: The Future – a fair deal for rural England	Facilitate the development of dynamic, competitive, and sustainable economies in the countryside. Conserve and enhance rural landscapes. Increase opportunities for people to get enjoyment from the countryside.	No targets or indicators.	Set out clear economic visions and objectives. Ensure the protection of the landscape and support recreation and access to the countryside.	Include a sustainability objective relating to strengthening the economy, and objectives relating to landscape and recreation/access to the countryside.

Local

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
West Sussex County Council and South Downs National Park Authority Joint Minerals Local Plan (JMLP)	The JMLP was adopted in July 2018 and covers the period to 2033. It provides the basis for making consistent decisions about planning applications for mineral activities in West Sussex. It sets out four key areas which will help shape the future of minerals activities in West Sussex: ▪ A vision and strategic objectives for sustainable minerals development; ▪ 10 policies to achieve the strategic objectives for minerals development in West Sussex (Policies M1-M10); ▪ 15 development management policies to ensure no unacceptable harm to the environment, economy, or communities of West Sussex (policies 12-26); ▪ One site allocation to help meet the need for brick making clay (policy M11). The strategy and allocation for soft sand was removed during the examination and a single issue review is underway.	A range of monitoring indicators are set out under the relevant policy within the JMLP.	Provides the framework within which this single issue soft sand review sits.	The SA framework for this single issue soft sand review is established in the JMLP. The SA in the JMLP provides information to feed into assessments on in combination and cumulative effects.
South Downs Local Plan 2014-2033	The SDLP was adopted in July 2019. It is the first Local Plan to cover for whole of the South Downs National Park area and replaces all previous planning policies across the National Park.	A range of monitoring indicators are set out in Chapter 11 of the Local Plan.	Plan should include policies to protect conserve and, where possible, enhance the character, special qualities, condition, distinctiveness, and environmental quality of the South Downs National Park.	Include objectives to conserve and enhance biodiversity, geodiversity, landscape character, amenity, and cultural heritage.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
South Downs Partnership Management Plan – emerging review 2020-2025	The PMP is in the latter stages of the review process. The following outcomes have been agreed to be taken forward: ▪ Purpose 1: Enhance ▫ Outcome 1 The landscape character of the South Downs, its special qualities, natural beauty, and local distinctiveness have been conserved and enhanced by avoiding or mitigating the negative impacts of development and cumulative change. ▫ Outcome 2 There is increased resilience within the landscape for its natural resources, habitats, and species to adapt to the impacts of climate change and other pressures. ▫ Outcome 3 A thriving and connected network of habitats and increased population and distribution of priority species now exist in the National Park. ▫ Outcome 4 Cultural heritage of the National Park is enhanced and widely understood and enjoyed. ▪ Purpose 2: Experience ▫ Outcome 5 Outstanding experiences for communities and visitors are supported by high quality access and sustainable transport networks. ▫ Outcome 6 Widespread understanding of the special qualities of the National Park and the benefits it provides. ▫ Outcome 7 The South Downs National Park is a well-used and recognised asset for sustaining mental and physical health and wellbeing. ▫ Outcome 8 More responsibility and action is taken by visitors, communities and businesses to conserve and enhance the special qualities and use resources more wisely. ▪ Purpose 3: Thrive ▫ Outcome 9 Communities in the National Park are more sustainable with an appropriate provision of housing to address local needs and improved access to essential services and facilities. ▫ Outcome 10 A diverse, sustainable, dynamic economy which is positively linked to the special qualities of the National Park.	No specific indicators as yet – in development.	Ensure allocations and policies contribute to the outcomes of the PMP.	Include SA objectives that address the themes of the PMP outcomes.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
High Weald AONB Unit (2019): High Weald AONB Management Plan 2019-2024	The Management Plan contains a range of objectives related to the protection of: ▪ 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 2019-2024.	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 (2019): Chichester Harbour AONB Management Plan 2019-2024 Third Review.	Vision to 2050: In 2050, the nationally and internationally important landscape and setting of Chichester Harbour is conserved and enhanced. ▪ The special qualities of the Area of Outstanding Natural Beauty are appreciated and enjoyed by local people and visitors who care for the Harbour now and in the future. ▪ Management is balanced by ongoing mutual respect shown by different user groups and all within the natural limits of the Harbour. ▪ The diverse habitats and excellent water quality benefit the rich array of wildlife, which use the Harbour in harmony with the recreational activities of sailing, walking, cycling and relaxing. ▪ People understand and value their surroundings with many opportunities for outdoor education. ▪ Businesses thrive with marine enterprises, farmers and tourism providers positively contributing towards a prosperous local economy whilst safeguarding the natural and historic environment. Chichester Harbour is a resilient landscape, where local communities and businesses are prepared and able to adapt to future challenges.	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 (2012): An Economic Strategy for West Sussex 2012-2020	Sets out seven strategic priorities for the economy of West Sussex, including the following which may be relevant to the mineral plan: ▪ 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 JMLP and SIR.	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.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
West Sussex County Council (2011): West Sussex Transport Plan 2011-2026	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: ▪ promoting economic growth; ▪ tackling climate change.	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,	Plan should include policies which should assist in the promotion of an efficient economy and the achievement of sustainable economic growth. 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.	Consider objectives aiming to minimise use of rural roads and maximise use of the strategic road network and lorry route networks Consider objectives to sustain economic growth through the provision of an adequate supply of construction and other materials. Consider objectives to reduce the emission of greenhouse gases.
West Sussex County Council (2014): West Sussex Waste Local Plan 2014-2031	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 SIR of the JMLP.	Consider inclusion of objective to avoid mineral reserve sterilisation.
West Sussex Annual Sustainability Report (2018/19)	The Annual Sustainability report explains how West Sussex has progressed in reducing costs and its direct impact on the five key indicators: ▪ carbon; ▪ energy; ▪ water; ▪ waste; ▪ travel. And progress on a variety of strategies and programmes including: ▪ Air quality plan; ▪ Pollinator action plan; ▪ Operation Watershed; ▪ Reduction in carbon footprint from 2011 to 2022 by 50% and to reach net zero carbon emissions by 2030.	As previous column.	As this issue is largely covered in the JMLP it will not need to be included in the SIR of the JMLP.	The issue is covered through the SA framework as established in the JMLP.
Sussex Biodiversity Partnership (2014) Sussex Biodiversity Action Plan	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.	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.	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.	Consider inclusion of objectives to protect and, enhance biodiversity and natural character.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
South Downs National Park: South Downs Way Ahead Nature Improvement Area	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 Brighton and Lewes Downs Biosphere Project	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 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".	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.
Environment Agency (2009): Water for Life and Livelihoods: River Basin Management Plan, South East River Basin District	Improved water quality within the South East River Basin District.	To meet the requirements of the WFD:		Environment Agency (2009): Water for Life and Livelihoods: River Basin Management Plan, South East River Basin District
Environment Agency (2009): Water for Life and Livelihoods: River Basin Management Plan, Thames River Basin District	Focuses on the protection, improvement, and sustainable use of the water environment.	To meet the requirements of the WFD:		Environment Agency (2009): Water for Life and Livelihoods: River Basin Management Plan, Thames River Basin District
Environment Agency (2006): Shoreline Management Plans for Beachy Head to Selsey	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 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.	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 century. Plan should include polices that take the risks of development in the SMP into account.	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 SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
Environment Agency (2010): Rivers Arun to Adur flood and erosion management strategy 2010-2020	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): Pagham to East Head Coastal Defence Strategy	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 risk management over the next 50 to 100 years.	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.
Environment Agency (2019): Abstraction licensing strategies (CAMS process) Arun and Western Streams	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: ▪ 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).	The main components of this assessment that help us to understand the availability of water resources are: ▪ 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 (2019): Abstraction licensing strategies (CAMS process) Adur and Ouse	The same objectives are set out as described above for the Abstraction licensing strategies (CAMS process) Arun and Western Streams.	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.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
Environment Agency (2012): Lower Tidal River Arun Strategy	The overall Strategy objectives are: ▪ 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.	The Strategy considered the following indicators in relation to options to addressing flood risk management over 100-year timeframe: ▪ 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.	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.
Environment Agency (yet to be published): 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. 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 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.	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.
Southern Water (2013): Draft Water Resources Management Plan 2015-2040	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 wastewater undertakers.	The SA should contain objectives protecting water supply and water bodies from pollution.
Thames Water: Draft Water Resources Management Plan 2015-2020	Maintain drinking water quality at 99.95% compliance with the relevant drinking water standards; Maintain security of water supply;	Reduce leakage by 10% by 2020 (from the current target of 673 Ml/d to 606 Ml/d)	Plan should consider the needs and requirements of all licensed water suppliers and statutory wastewater undertakers.	The SA should contain objectives protecting water supply and water bodies from pollution.

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
Portsmouth Water (2018): Draft Water Resources Management Plan	The Strategy set out the following objectives: ▪ 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: ▪ 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 wastewater undertakers.	The SA should contain objectives protecting water supply and water bodies from pollution.
Portsmouth Water (2019): Final Drought Plan	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 wastewater undertakers.	The SA should contain objectives protecting water supply and water bodies from pollution.
West Sussex County Council (2005): A Strategy for the West Sussex Landscape	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. 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.	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.
West Sussex Landscape Character Assessments	The Surrey Landscape Character Assessment (LCA) is a comprehensive assessment of the landscape character of the county and describes the different variations of landscape in a county context.	None	The cross-boundary issues will need to be addressed during preparation of the MLP.	Consider inclusion of objectives to reduce cumulative impacts of mineral development.
Surrey County Council (2015): Landscape Character Assessment	The Surrey Landscape Character Assessment (LCA) is a comprehensive assessment of the landscape character of the county and describes the different variations of landscape in a county context.	Policies are monitored through the annual monitoring report.	The cross-boundary issues will need to be addressed during preparation of the MLP.	Consider inclusion of objectives to reduce cumulative impacts of mineral development.
East Sussex Country Council (2013): East Sussex Waste and Minerals Plan	The Plan sets out that cooperation with neighbouring local authorities, including West Sussex, is necessary to overcome certain issues regarding minerals, such as: ▪ 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 through 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): Hampshire Minerals and Waste Plan	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 through 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

Strategy/Plan/Programme	Key objectives relevant to the SIR of the JMLP and SA	Key targets and indicators relevant to the SIR of the JMLP and SA	Implications for the SIR of the JMLP	Implications for the SA
Surrey County Council (2011): Surrey Minerals Plan	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 through 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.
Kent County Council: Minerals and Waste Local Plan 2013–2030	Planning for Minerals in Kent will: ▪ 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 and rail depots and production facilities); ▪ Restore minerals sites to a high standard that will deliver sustainable benefits to Kent communities.	Policies are monitored through 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.

Appendix 2: SA Scoring Criteria (from SA of JMLP)[6]

SA Objective

To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.

Subsidiary Questions

Would the site/policy:

- 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, wellbeing, and amenity through enhancements?
- Create cumulative effects in terms of adverse impacts on environmental quality, social cohesion and inclusion or economic potential?

Background Information Affecting Assumptions

Some minerals sites could have a minor negative effect on protecting the health of local residents, communities, and visitors to the County. Dust[7] 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 1995[8] 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.

National Planning Practice Guidance for Minerals[9] 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

[6] SA Framework and Assumptions for judging significance of effects of the West Sussex Minerals Local Plan Site Options (taken from Appendix 2 of January 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).

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

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

[9] Available at: Minerals Guidance on GOV.UK.

measures to monitor and control PM10 might be necessary. However, former Annex 1 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.

The NPPF is clear that minerals planning authorities should ensure that unavoidable dust emissions are controlled and mitigated or removed at source. Therefore, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential health effects.

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 Minerals[10] 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.

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.

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. Therefore, it is assumed that mineral extraction at any of the potential sites will be well operated and that mitigation measures implemented should be sufficient to avoid any potential long term amenity effects.

There could be potential for land use conflict where minerals sites are in close proximity to areas planned for future residential development.

The NPPF states that local planning authorities should take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality.

Assumptions for determining significance of effects on SA Objective 1 are given in the table below.

[10] Accessible at: Minerals Guidance on GOV.UK.

Score	Justification/Reasons for Score
++	n/a
+	n/a
0	Potential minerals sites which are: ▪ Over 100m from sensitive receptors (i.e., residential areas, schools, hospitals, faith centres (e.g., churches, mosques, temples) including areas identified or allocated for residential development in Local Plans are considered unlikely to have effects on health and local amenity; ▪ 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; ▪ 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; ▪ 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.
-?	Potential minerals sites which are: ▪ Within 100m of sensitive receptors (i.e., residential areas, schools, hospitals, faith centres (e.g., churches, mosques, temples) including areas identified or allocated for residential development in Local Plans 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 (-?). In addition, potential sites which are: ▫ 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 could have a cumulative effect on the amenity of the local community.
--	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.

Data Sources and Limitations

Visual analysis of Ordnance Survey (OS) base maps for residential areas, hospitals, and faith centres.

WSCC data showing location of schools, location of existing minerals and waste sites, and allocated waste sites in the West Sussex Local Plan.

Visual analysis of relevant Local Plan maps for areas planned for future residential development, however, the certainty of these development locations depends on the status of the Local Plan in question, i.e., how close to Adoption it is (the date and stage of each Local Plan will be referred to in the SA matrices).

GIS analysis of a number of existing and potential mineral sites within 1km of existing settlement boundaries.

Any relevant information from the WSCC site assessment process.

Appendix 3: Option Appraisals A-D

Option A: Sites within West Sussex and outside of the SDNPA

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	The policy option supports both the maintenance of supplies from permitted reserves of soft sand and the identification of allocations and/or areas of search in West Sussex beyond the SDNP. 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.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-?	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 other 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.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	/-?	The policy option is likely to have uncertain 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 depending on where sites are worked. Minerals are essential to sustain and enhance the vitality and viability of the local economy and as this option allows for the continued working of minerals within West Sussex there may be some positive effects. If enough sites cannot be identified there may be a negative impact on this objective as jobs may move elsewhere.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	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 would provide a robust framework for appropriate use of minerals. The exact effect on this objective will depend on the location and geographical spread of sites identified. If viable resources are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	+/-?	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.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	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. The allocation of sites for minerals working and mineral exploration may also have potential adverse effects on designated sites, protected species, or habitats during operation of those sites. These impacts may be avoided or mitigated through the planning system. 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.
7. To protect and conserve geodiversity.	+/-?	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. The effects would be uncertain depending 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.
8. To conserve, and where possible, enhance the historic environment.	+/-?	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 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. The 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.

SA Objective	SA Score	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+/-?	It is unlikely that sites containing permitted reserves would affect this SA objective as 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. This policy option may result in the loss of best and most versatile land through the allocation of additional sites 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, and uncertain.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	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.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	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.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	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. 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.
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.	--?	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. Therefore, overall, a potential negative effect is anticipated. However, this is uncertain as it will depend on the location of the site allocations and any level of imports that would be required to meet the demand in West Sussex if there was a shortfall in supply. This will not be known until more certainty is gained on the identified site allocations/areas of search for soft sand.
14. To reduce the emissions of greenhouse gases.	+/-?	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. Allocating sites within West Sussex potentially reduces the need for additional importation of soft sand. The increased dependence on imports to meet requirements which cannot be met from indigenous supplies could 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. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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.

Option B: Sites within West Sussex including the SDNPA

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	The policy option supports both the maintenance of supplies from permitted reserves of soft sand and the identification of allocations and/or areas of search in West Sussex including the SDNP. There are potential impacts on 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. Appropriate allocations should minimise the potential impacts on this objective. Impacts 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 later in the planning process.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	+/-?	The policy option could have minor negative effects on SA objective 2 as any additional mineral working could impact upon the amenity of users of PROW or other 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. 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 later in the planning process.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	/+?	The policy option is likely to have uncertain effects on SA Objective 3 as although identifying allocations across a wider areas of West Sussex increases the potential for job creation it is uncertain at this stage where the allocations would be. Extensions to existing sites would provide the opportunity to maintain existing employment opportunities. Minerals are essential to sustain and enhance the vitality and viability of the local economy and as this option allows for the continued working of minerals within West Sussex there may be some positive effects. If enough sites cannot be identified there may be a negative impact on this objective as jobs may move elsewhere.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	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 would provide a robust framework for appropriate use of minerals. The exact effect on this objective will depend on the location and geographical spread of sites identified. If viable resources are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--?	This policy option has the most potential to cause landscape harm as it includes the possibility of allocations within the South Downs National Park. Even where the impact of development is mitigated, 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 later in the planning process. 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 in some locations.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	The allocation of sites for minerals working and mineral exploration has the potential for adverse effects on designated sites, protected species, or habitats during operation of those sites. These impacts may be avoided or mitigated through the planning system. 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 later in the planning process.
7. To protect and conserve geodiversity.	+/-?	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. The effects would be uncertain depending 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.
8. To conserve, and where possible, enhance the historic environment.	+/-?	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. The potential to allocate sites across the whole of West Sussex allows for more flexibility in avoiding or more sensitively developing sites that could impact on the historic environment. The policy option is likely to have mixed, minor positive and minor negative effects on this SA objective. The 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.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	This policy option may result in the loss of best and most versatile land through the allocation of additional sites however by considering allocations across the whole of West Sussex the option allows greater opportunity to avoid or sensitively develop allocated sites. 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, and uncertain.

SA Objective	SA Score	Justification
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	This policy option supports the identification of new site allocations to meet the supply requirements set out in the LAA. 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. The exact nature of the effects will be uncertain until later in the planning process. As minerals currently travel across the West Sussex border, and the policy seeks to maintain supply levels, there may be a minimal increase in lorry movements as a whole.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	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 later in the planning process. As this option allows for the identification of sites across the whole of West Sussex there is greater potential to avoid or mitigate any impacts that could arise.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	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. 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.
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.	--?	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 could increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. It is likely that extensions to existing sites might only be worked once the initial workings are complete. Therefore, overall, a potential negative effect is anticipated. However, this is uncertain as it will depend on the location of the site allocations and any level of imports that would be required to meet the demand in West Sussex if there was a shortfall in supply. This will not be known until more certainty is gained on the identified site allocations/areas of search for soft sand.
14. To reduce the emissions of greenhouse gases.	-?	Allocating sites within West Sussex potentially reduces the need for additional importation of soft sand. The increased dependence on imports to meet requirements which cannot be met from indigenous supplies could result in increases in lorry traffic transporting material into West Sussex by road. Therefore, minor negative effects are expected due to increases in the emission of greenhouse gases. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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 later in the planning process.

Option C: Supply from Areas outside West Sussex

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	The policy option supports both the maintenance of supplies from permitted reserves of soft sand and the importation of material from other areas and sources. Land won soft sand is currently imported to and exported from West Sussex. Although aggregates are not thought to travel great distances there is evidence that the market allows for greater distances where there is a shortage of supply. This option may therefore affect the local amenity and the wellbeing of residents, neighbouring land uses and visitors to West Sussex due to impacts such as noise, vibration and traffic associated with mineral importation or there may be less impact if material is landed at existing wharves and this supply substitutes for material no longer worked from the land within West Sussex. The potential for effects will depend on the availability of soft sand from other areas and where and how it is brought into the Plan Area. On one hand, there is less potential for negative impacts on Objective 1 as this policy option does not seek to allocate sites in West Sussex. However, if the Plan does not identify soft sand sites within West Sussex, planning applications may still come forward. As the applications may be in less preferable areas there is potential for negative effects on this objective.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	+/-?	The policy option could have minor negative effects on this SA objective as although no site allocations are proposed, increases in imports could impact upon the amenity of users of PROW or other users of the countryside in the area. In contrast to other options there is little opportunity for enhancement within Option C, other than the discontinuation of existing mineral workings. Restoration proposals for existing sites will already be in place. This option is likely to have very minor effects on this SA objective. Effects are still uncertain as the potential for effects will depend on the supply of imported material which is not known at this time.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	-?	This policy option is likely to have minimal effects on the local economy. It is uncertain at this stage what effect the importation of alternative materials will have on the local economy. There may be a loss of jobs from existing extraction sites within West Sussex or new jobs may be created to provide and import materials. This option is less positive than Options A and B.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	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 would provide a robust framework for appropriate use of minerals. If viable resources within West Sussex are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	+/-?	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 later in the planning process.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	The policy option is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. By not allocating new sites for minerals working and mineral exploration there is also potential positive effects on designated sites, protected species, or habitats. The policy option is therefore likely to have positive effects on this SA objective.
7. To protect and conserve geodiversity.	+/-?	This policy option may lead to positive effects as the continued extraction of existing permitted reserves may uncover and harm geological interests. However, not identifying new sites for extraction decreases the potential to 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 minor positive and minor negative effects on this SA objective.
8. To conserve, and where possible, enhance the historic environment.	+?	This policy option is likely to have positive effects on this SA objective, as not identifying new areas of land extraction could positively affect the historic environment (e.g., archaeology), heritage assets and their setting 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.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	It is unlikely that sites containing permitted reserves would affect this SA objective as 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. This policy option is unlikely to result in the loss of best and most versatile land through the allocation of additional sites. There is potential for the loss of agricultural land through planning applications if the Plan does not identify allocations to meet supply. 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 later in the planning process, therefore effects on this SA Objective are likely to be minor, negative, and uncertain.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	This policy option supports the importation of soft sand is therefore likely to have negative impacts on this SA objective. It is uncertain where these materials would be sourced and although they could be landed at existing wharves within the Plan Area there will be road transport 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.

SA Objective	SA Score	Justification
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	Option C seeks to increase importation of soft sand. This may affect the water resources, water quality or the function of the water environment outside of West Sussex 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 where and how the alternative materials are sourced.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	This policy option is likely to have minimal impact on this objective. Mineral working is considered to be 'water compatible'. By relying on importation of materials and not allocating sites within West Sussex it is possible that some opportunities for flood alleviation could be lost.
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.	--?	This policy option supports the use of imported materials, and this 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. Therefore, overall, a potential negative effect is anticipated. However, this is uncertain as it will depend on the where material is sourced and how material is transported.
14. To reduce the emissions of greenhouse gases.	-?	Supporting the use of imported materials may have a negative impact compared to the use of land won aggregates from new sites within West Sussex. This policy option may increase the importation and movement of materials. Therefore, minor negative effects are also expected due to increases in the emission of greenhouse gases. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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 later in the planning process.

Option D: Supply from Alternative Sources including Marine Dredged

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	The policy option supports both the maintenance of supplies from permitted reserves of soft sand and the importation of material from other areas and sources. It is unclear where and how this material would be imported, and it is therefore uncertain where and how any effects would occur. This option may therefore affect the local amenity and the wellbeing of residents, neighbouring land uses and visitors to West Sussex due to impacts such as noise, vibration and traffic associated with mineral workings or there may be less impact if material is landed at existing wharves and this supply substitutes for material no longer worked from the land within West Sussex. The potential for effects will depend on the availability of alternative materials and where and how they are brought into the Plan Area. On one hand, there is less potential for negative impacts on Objective 1 as this policy option does not seek to allocate sites in West Sussex. However, if the Plan does not identify soft sand sites within West Sussex, planning applications may still come forward. As the applications may be in less preferable areas there is potential for negative effects on this objective.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-?	The policy option could have minor negative effects on this SA objective as although no site allocations are proposed, increases in imports could impact upon the amenity of users of PROW or other users of the countryside in the area. In contrast to other options there is little opportunity for enhancement within Option D, other than the discontinuation of existing mineral workings. Restoration proposals for existing sites will already be in place. This option is likely to have very minor effects on this SA objective. Effects are still uncertain as the potential for effects will depend on the supply of imported material which is not known at this time.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	/-?	This policy option is likely to have minimal effects on the local economy. It is uncertain at this stage what effect the importation of alternative materials will have on the local economy. There may be a loss of jobs from existing extraction sites within West Sussex or new jobs may be created to provide and import materials. This option may be less positive than Options A and B.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	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 would provide a robust framework for appropriate use of minerals. If viable resources within West Sussex are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	+/-?	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 later in the planning process.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	The policy option is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. By not allocating new sites for minerals working and mineral exploration there is also potential positive effects on designated sites, protected species, or habitats. The policy option is therefore likely to have positive effects on this SA objective.
7. To protect and conserve geodiversity.	+/-?	This policy option may lead to positive effects as the continued extraction of existing permitted reserves may uncover and harm geological interests. However, not identifying new sites for extraction decreases the potential to 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 minor positive and minor negative effects on this SA objective.
8. To conserve, and where possible, enhance the historic environment.	+	This policy option is likely to have positive effects on this SA objective, as not identifying new areas of land extraction could positively affect the historic environment (e.g., archaeology), heritage assets and their setting 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.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+?	It is unlikely that sites containing permitted reserves would affect this SA objective as 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. This policy option is unlikely to result in the loss of best and most versatile land through the allocation of additional sites. There is potential for the loss of agricultural land through planning applications if the Plan does not identify allocations to meet supply. 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 later in the planning process, therefore effects on this SA Objective are likely to be minor, negative, and uncertain.

SA Objective	SA Score	Justification
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	This policy option supports the importation of alternative materials and is therefore likely to have negative impacts on this SA objective. It is uncertain where these materials would be sourced and although they could be landed at existing wharves within the Plan Area there will be road transport 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.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	Option D seeks to increase alternative supplies. It is uncertain at this stage what these materials are and where they would be sourced. This may affect the water resources, water quality or the function of the water environment inside or outside of West Sussex 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 where and how the alternative materials
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	This policy option is likely to have minimal impact on this objective. Mineral working is considered to be 'water compatible'. By relying on alternative materials and not allocating sites within West Sussex it is possible that some opportunities for flood alleviation could be lost.
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.	--?	This policy option supports the use of alternative materials, and this 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. Therefore, overall, a potential negative effect is anticipated. However, this is uncertain as it will depend on the where material is sourced and how material is transported.
14. To reduce the emissions of greenhouse gases.	+/-?	Supporting the use of alternative materials may have a positive impact compared to the use of land won aggregates from new sites. This policy option may increase the importation and movement of materials. Therefore, minor negative effects are also expected due to increases in the emission of greenhouse gases. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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 later in the planning process.

Appendix 4: Regulation 19 Option Appraisals

Option E: A plus C (Sites within West Sussex and outside of the SDNPA plus supply from areas outside West Sussex)

In assessing E1, the SA has taken account of the work prepared of the South East Mineral Planning Authorities in relation to the Position Statement on Soft Sand, as well as the Statement of Common Ground the Authorities have prepared with Kent County Council and East Sussex County Council. There is still a high degree of uncertainty about how much material is available in the wider South East region and where such material might travel. It is entirely conceivable that some material will travel from Kent to West Sussex (and vice versa) as indicated by research that ESCC has prepared jointly with the SDNPA and BHCC in preparation of the Review of the East Sussex, South Downs and Brighton and Hove Waste and Minerals Plan

This combination of options slightly increases the deliverability of the strategy however the uncertainly in relation to how much material may be available is high Policies M2, M11 and future reviews of the JMLP should take account of the changing position of the availability and constraint on material in the wider South East.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	The policy option supports both the maintenance of supplies from permitted reserves of soft sand and the identification of allocations in West Sussex beyond the SDNP It also supports allowing material from beyond the Plan Area to compensate for reduced extraction within West Sussex. All mineral working has potential to 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. Reliance on material from outside of the Plan Area removes control the Plan can exercise over development. This option also increases the likelihood of additional traffic movements and potential associated health impacts. There may be less impact if material is landed at existing wharves. Effects at this stage are assessed as uncertain. 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. Technical studies in support of any development should assess the impacts and the planning system (and permitting systems) provide control and a mechanism for avoidance and mitigation, where appropriate.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-?	The policy option could have minor negative effects on this SA objective. Site allocations that could come forward under this policy option or increased imports could impact upon the amenity of users in the countryside, the value of open space and PROW. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor potential positive effect is also identified. It is unlikely that sites containing existing permitted reserves would affect this SA objective. They are unlikely to result in any additional negative impacts on recreation, but they may offer enhancements through restoration proposals. Therefore, this option is likely to have mixed, minor positive and minor negative effects on SA Objective 2. The effects would be uncertain as the potential will depend on the exact nature and design of any site allocations/areas of search that come forward at the planning application stage.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	/-?	The policy option is likely to have uncertain effects on SA Objective 3. Minerals are essential to sustain and enhance the vitality and viability of the local economy and as this option allows for the continued working of minerals within West Sussex there may be some positive effects. If enough sites cannot be identified there may be a negative impact on this objective as jobs may move elsewhere. Jobs could be created to support the importation of materials.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	The exact effect on this objective will depend on the location and geographical spread of sites identified in West Sussex and where material is imported from outside the Plan Area. If viable resources are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development. 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 that could come forward would provide a robust framework for appropriate use of minerals
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	+/-?	This policy option is likely to have minor positive effects on SA Objective 5 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 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.

SA Objective	SA Score	Justification
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	The policy option is likely to have minor positive effects on SA Objective 6 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. The allocation of sites for minerals working and mineral exploration may also have potential adverse effects on designated sites, protected species, or habitats during operation of those sites. These impacts may be avoided or mitigated through the planning system. The policy option is therefore likely to have mixed, minor positive and minor negative effects on SA Objective 6. 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.
7. To protect and conserve geodiversity.	+/-?	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. The effects would be uncertain depending 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.
8. To conserve, and where possible, enhance the historic environment.	+/-?	This policy option is likely to have minor negative effects on SA Objective 8, 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 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. The 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.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+/-?	It is unlikely that sites containing permitted reserves would affect SA Objective 9 as 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. This policy option may result in the loss of best and most versatile land through the allocation of additional sites 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, and uncertain.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	This policy option supports the supply of soft sand from permitted reserves and potential site allocations that may come forward. Additionally, it opens up the potential for increased imports by road which means this policy option is likely to have negative impacts on this SA objective Increased traffic may negatively affect air quality due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the Strategic Lorry Network.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	This policy option seeks to maintain supplies from permitted reserves and may lead to allocation sites coming forward and minimises impacts in West Sussex by seeking additional resource from outside the Plan Area. This approach may affect the water resources, water quality or the function of the water environment in West Sussex at a more detailed stage but this will very much depend on sites proposals (location, design, method of working etc.), which would be assessed at the planning application stage.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	This policy option relates to soft sand extraction and is therefore not expected to have an effect on SA Objective 12, as sand and gravel workings are classed as water-compatible development. This type of development is potentially suitable for all flood zones including 3b, the functional floodplain. This also means any sites may have the potential to increase flood capacity and have minor positive effects on this SA objective. 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.
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.	--?	This policy option supports the continued extraction from existing, transporting extracted material by road. Any newly allocated sites/areas of search that come forward may increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. Whether there is an increase in traffic or not will depend on the timing of this and other development. Planning applications should provide an assessment of the potential impact on traffic and air quality. Overall, a potential negative effect is anticipated. However, this is uncertain as set out above and exact effects will be determined at the planning application stage.
14. To reduce the emissions of greenhouse gases.	+/-?	This policy option may have minor positive effects on reducing the emission of greenhouse gases as it minimises new areas of extraction within the Plan Area. The increased dependence on imports to meet requirements which cannot be met from local supplies could 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. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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.

Option E: A plus D (Sites within West Sussex and outside of the SDNPA plus supply from alternative sources)

In assessing E2, the SA has taken account of the information provided by the Crown Estate and others who made representations to the Issues and Options consultation. There is evidence that some marine material may be blended to provide a substitute for soft sand in very limited cases. The material involved is likely to be dredged from the Bristol Channel and would need to travel a long distance to reach West Sussex. At this time, it is not considered that the seabed off the South Coast offers the same potential. Although there may be potential in the future there is unlikely to be infrastructure in place to support the exploration of this potential until much later in the Plan period. Dredging of any viable material from the sea would also be subject to sustainability and environmental assessments.

This combination of options slightly increases the deliverability of the strategy however uncertainty in relation to how much material may be available to meet the need as set out in Issue 1 is high. Policies M2, M11 and future reviews of the JMLP should take account of the potential of material to be dredged from the south coast.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	The policy option supports both the maintenance of supplies from permitted reserves of soft sand and the importation of material from other areas and sources. It is unclear where and how this material would be imported, and it is therefore uncertain where and how any effects would occur. This option may therefore affect the local amenity and the wellbeing of residents, neighbouring land uses and visitors to West Sussex due to impacts such as noise, vibration and traffic associated with mineral workings or there may be less impact if material is landed at existing wharves and this supply substitutes for material no longer worked from the land within West Sussex. The potential for effects will depend on the availability of alternative materials and where and how they are brought into the Plan Area. On one hand, there is less potential for negative impacts on Objective 1 as this policy option does not seek to allocate sites in West Sussex. However, if the Plan does not identify soft sand sites within West Sussex, planning applications may still come forward. As the applications may be in less preferable areas there is potential for negative effects on this objective.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-?	The policy option could have minor negative effects on this SA objective as although no site allocations are proposed, increases in imports could impact upon the amenity of users of PROW or other users of the countryside in the area. In contrast to other options there is little opportunity for enhancement within this option, other than the discontinuation of existing mineral workings. Restoration proposals for existing sites will already be in place. This option is likely to have very minor effects on this SA objective. Effects are still uncertain as the potential for effects will depend on the supply of imported material which is not known at this time.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	/-?	This policy option is likely to have minimal effects on the local economy. It is uncertain at this stage what effect the importation of alternative materials will have on the local economy. There may be a loss of jobs from existing extraction sites within West Sussex or new jobs may be created to provide and import materials. This option may be less positive than other options.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	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 that could come forward would provide a robust framework for appropriate use of minerals. If viable resources within West Sussex are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	+/-?	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 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 later in the planning process.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+	The policy option is likely to have minor positive effects on this SA objective as the maintenance of supply from existing permitted reserves may have the potential to achieve net gains for biodiversity during working or restoration via biodiversity enhancement opportunities that may exist. By not allocating new sites for minerals working and mineral exploration there is also potential positive effects on designated sites, protected species, or habitats. The policy option is therefore likely to have positive effects on this SA objective.
7. To protect and conserve geodiversity.	+/-?	This policy option may lead to positive effects as the continued extraction of existing permitted reserves may uncover and harm geological interests. However, not identifying new sites for extraction decreases the potential to 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 minor positive and minor negative effects on this SA objective.
8. To conserve, and where possible, enhance the historic environment.	+	This policy option is likely to have positive effects on this SA objective, as not identifying new areas of land extraction could positively affect the historic environment (e.g., archaeology), heritage assets and their setting 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.

SA Objective	SA Score	Justification
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+?	It is unlikely that sites containing permitted reserves would affect this SA objective as 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. This policy option is unlikely to result in the loss of best and most versatile land through the allocation of additional sites. There is potential for the loss of agricultural land through planning applications if the Plan does not identify allocations to meet supply. 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 later in the planning process, therefore effects on this SA Objective are likely to be minor, negative, and uncertain.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	This policy option supports the importation of alternative materials and is therefore likely to have negative impacts on this SA objective. It is uncertain where these materials would be sourced and although they could be landed at existing wharves within the Plan Area there will be road transport 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.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	This option seeks to increase alternative supplies. It is uncertain at this stage what these materials are and where they would be sourced. This may affect the water resources, water quality or the function of the water environment inside or outside of West Sussex 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 where and how the alternative materials are sourced.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	This policy option is likely to have minimal impact on this objective. Mineral working is considered to be 'water compatible'. By relying on alternative materials and not allocating sites within West Sussex it is possible that some opportunities for flood alleviation could be lost.
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.	--?	This policy option supports the use of alternative materials, and this 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. Therefore, overall, a potential negative effect is anticipated. However, this is uncertain as it will depend on the where material is sourced and how material is transported.
14. To reduce the emissions of greenhouse gases.	+/-?	Supporting the use of alternative materials may have a positive impact compared to the use of land won aggregates from new sites. This policy option may increase the importation and movement of materials. Therefore, minor negative effects are also expected due to increases in the emission of greenhouse gases. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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 later in the planning process.

Option E: A plus C plus D (Sites within West Sussex outside of the SDNPA plus supply from areas outside West Sussex and alternative sources)

This combination of options slightly increases the deliverability of the strategy and reduces some of the uncertainty in relation to how much material may be available to meet the need as set out in Issue 1. All options that rely on material solely from outside of the SDNP increase uncertainty of supply and potential environmental impacts. Policies M2, M11 and future reviews of the JMLP should take account of the potential of material to be dredged from the south coast.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score for E1	SA Score for E2	SA Score for E3
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	+/-?	+/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-?	-?	-?
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	/-?	/-?	/-?
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	+?	+?
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	+/-?	+/-?	+/-?
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+?	+	+
7. To protect and conserve geodiversity.	+/-?	+/-?	+/-?
8. To conserve, and where possible, enhance the historic environment.	+/-?	+	+
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	+/-?	+?	+?
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	-?	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	?	?
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	--?	--?	-?
14. To reduce the emissions of greenhouse gases.	+/-?	+/-?	+/-?

Option E: B plus C (Sites within West Sussex including the SDNPA plus supply from areas outside West Sussex)

In assessing Option E4, the SA takes account of the limited availability of sites solely within West Sussex and outside of the SDNP. There are a number of sites within the SSR I&O shortlist within the SDNP, so it is reasonable to assume that there is flexibility in identifying the sites that are the most sustainable.

There is still a high degree of uncertainty about how much material is available in the wider South East region and where such material might travel. It is entirely conceivable that some material will travel from Kent to West Sussex (and vice versa) as indicated by research that ESCC has prepared jointly with the SDNPA and BHCC in preparation of the Review of the East Sussex, South Downs and Brighton and Hove Waste and Minerals Plan which is currently being prepared.

This combination of options slightly increases the deliverability of the strategy and reduces some uncertainty in relation to how much material may be available. Policies M2, M11 and future reviews of the JMLP should take account of the changing position of the availability and constraint on material in the wider South East.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	The policy option supports the maintenance of supplies from permitted reserves of soft sand, the identification of allocations in West Sussex including the SDNP and the reliance on land won material from beyond the Plan Area. There are potential impacts on 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. Appropriate allocations should minimise the potential impacts on this objective. Impacts will be uncertain as the potential for effects will depend on the exact nature and design of any site allocations that come forward, which would not be known until later in the planning process.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	+/-?	The policy option could have minor negative effects on SA Objective 2 as any additional mineral working could impact upon the amenity of users of PROW or other 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. 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 later in the planning process.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	-/+?	The policy option is likely to have uncertain effects on SA Objective 3 as although identifying allocations across a wider areas of West Sussex increases the potential for job creation it is uncertain at this stage where the allocations would be, and the policy option allows for the need for minerals to be met from outside the Plan Area. Extensions to existing sites would provide the opportunity to maintain existing employment opportunities. Minerals are essential to sustain and enhance the vitality and viability of the local economy and as this option allows for the continued working of minerals within West Sussex there may be some positive effects. If enough sites cannot be identified there may be a negative impact on this objective as jobs may move elsewhere.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	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 that could come forward would provide a robust framework for appropriate use of minerals. The exact effect on this objective will depend on the location and geographical spread of sites identified. If viable resources are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	-?	E4, E5 and E6 have the most potential to cause landscape harm as it includes the possibility of allocations within the South Downs National Park. Allowing for some of the need for material to be met from outside of the Plan Area reduces the potential need to find sites within the SDNP and may reduce the potential for negative impacts. Even where the impact of development is mitigated, minor negative effects are also likely as continued extraction in the short term/long term at existing sites and future allocated sites 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 that come forward, which would not be known until later in the planning process. In the long term the restoration of sites containing permitted reserves and site allocations that come forward could lead to positive effects for the landscape in some locations.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	The allocation of sites for minerals working and mineral exploration has the potential for adverse effects on designated sites, protected species, or habitats during operation of those sites. These impacts may be avoided or mitigated through the planning system. Allowing for some of the need for material to be met from outside of the Plan Area reduces the potential need to find sites within the SDNP and may reduce the potential for negative impacts. 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 later in the planning process.
7. To protect and conserve geodiversity.	+/-?	This policy option may lead to minor negative effects as the continued extraction of existing permitted reserves and/or working of permitted allocated 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 option is likely to have mixed, minor positive and minor negative effects on this SA objective. The effects would be uncertain depending on the exact nature and design of any site allocations that come forward, which would not be known until the planning application stage.

SA Objective	SA Score	Justification
8. To conserve, and where possible, enhance the historic environment.	+/-?	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 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. The potential to allocate sites across the whole of West Sussex allows for more flexibility in avoiding or more sensitively developing sites that could impact on the historic environment. The policy option is likely to have mixed, minor positive and minor negative effects on this SA objective. The would be uncertain as the potential for effects will depend on the exact nature and design of any site allocations that come forward, which would not be known until the planning application stage.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	This policy option may result in the loss of best and most versatile land through the allocation of additional sites however by considering allocations across the whole of West Sussex the option allows greater opportunity to avoid or sensitively develop allocated sites. 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, and uncertain.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	This policy option supports the identification of new site allocations to meet the supply requirements set out in the LAA. 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. The exact nature of the effects will be uncertain until later in the planning process. As minerals currently travel across the West Sussex border, and the policy seeks to maintain supply levels, there may be a minimal increase in lorry movements as a whole.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	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 later in the planning process. As this option allows for the identification of sites across the whole of West Sussex there is greater potential to avoid or mitigate any impacts that could arise.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	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. 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. A minor positive uncertain affect is likely on this SA objective.
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.	--?	This policy option supports the supply of soft sand from permitted reserves and potential site allocations 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 could increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. It is likely that extensions to existing sites might only be worked once the initial workings are complete. Therefore, overall, a potential negative effect is anticipated. However, this is uncertain as it will depend on the location of the site allocations and any level of imports that would be required to meet the demand in West Sussex if there was a shortfall in supply. This will not be known until more certainty is gained on the identified site allocations/areas of search for soft sand.
14. To reduce the emissions of greenhouse gases.	-?	Allocating sites within West Sussex potentially reduces the need for additional importation of soft sand. The increased dependence on imports to meet requirements which cannot be met from indigenous supplies could result in increases in lorry traffic transporting material into West Sussex by road. Therefore, minor negative effects are expected due to increases in the emission of greenhouse gases. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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 later in the planning process.

Option E: B plus D (Sites within West Sussex including the SDNPA plus supply from alternative sources)

In assessing Option E5, the SA takes account of the limited availability of sites solely within West Sussex and outside of the SDNP. There are a number of sites within the SSR I&O shortlist within the SDNP, so it is reasonable to assume that there is flexibility in identifying the sites that are the most sustainable.

The SA has taken account of the information provided by the Crown Estate and others who made representations to the Issues and Options consultation. There is evidence that some marine material may be blended to provide a substitute for soft sand in very limited cases. The material involved is likely to be dredged from the Bristol Channel and would need to travel a long distance to reach West Sussex. At this time, it is not considered that the seabed off the South Coast offers the same potential. Although there may be potential in the future there is unlikely to be infrastructure in place to support the exploration of this potential until much later in the Plan period. Dredging of any viable material from the sea would also be subject to sustainability and environmental assessments.

This combination of options slightly increases the deliverability of the strategy and reduces some uncertainty in relation to how much material may be available. Policies M2, M11, and future reviews of the JMLP should take account of the changing position of the viability of marine material.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	+/-?	The policy option supports the maintenance of supplies from permitted reserves of soft sand, the identification of allocations in West Sussex including the SDNP and the reliance on alternative materials. There are potential impacts on 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. Appropriate allocations should minimise the potential impacts on this objective. Impacts will be uncertain as the potential for effects will depend on the exact nature and design of any site allocations that come forward, which would not be known until later in the planning process.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-?	The policy option could have minor negative effects on SA Objective 2 as any additional mineral working could impact upon the amenity of users of PROW or other 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. 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 that come forward, which would not be known until later in the planning process.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	-/+?	The policy option is likely to have uncertain effects on SA Objective 3 as although identifying allocations across a wider areas of West Sussex increases the potential for job creation it is uncertain at this stage where the allocations would be, and the policy option allows for the need for minerals to be met from outside the Plan Area. The potential for job creation in the alternative material sector within West Sussex is highly uncertain at this time. Extensions to existing sites would provide the opportunity to maintain existing employment opportunities. Minerals are essential to sustain and enhance the vitality and viability of the local economy and as this option allows for the continued working of minerals within West Sussex there may be some positive effects. If enough sites cannot be identified there may be a negative.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	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 that could come forward would provide a robust framework for appropriate use of minerals. Allowing for the importation of alternative materials may reduce the impact on land won resource in West Sussex. The exact effect on this objective will depend on the location and geographical spread of sites identified. If viable resources are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	-?	E4, E5 and E6 have the most potential to cause landscape harm as it includes the possibility of allocations within the South Downs National Park. Allowing for some of the need for material to be met from outside of the Plan Area reduces the potential need to find sites within the SDNP and may reduce the potential for negative impacts. Even where the impact of development is mitigated, minor negative effects are also likely as continued extraction in the short term/long term at existing sites and future allocated sites 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 that come forward, which would not be known until later in the planning process. In the long term the restoration of sites containing permitted reserves and site allocations that come forward could lead to positive effects for the landscape in some locations.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+/-?	The allocation of sites for minerals working and mineral exploration has the potential for adverse effects on designated sites, protected species, or habitats during operation of those sites. These impacts may be avoided or mitigated through the planning system. Allowing for some of the need for material to be met from outside of the Plan Area reduces the potential need to find sites within the SDNP and may reduce the potential for negative impacts. 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 later in the planning process.

SA Objective	SA Score	Justification
7. To protect and conserve geodiversity.	+/-?	This policy option may lead to minor negative effects as the continued extraction of existing permitted reserves and/or working of permitted allocated 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 option is likely to have mixed, minor positive and minor negative effects on this SA objective. The effects would be uncertain depending on the exact nature and design of any site allocations that come forward, which would not be known until the planning application stage.
8. To conserve, and where possible, enhance the historic environment.	+/-?	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 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. The potential to allocate sites across the whole of West Sussex allows for more flexibility in avoiding or more sensitively developing sites that could impact on the historic environment. The policy option is likely to have mixed, minor positive and minor negative effects on this SA objective. The would be uncertain as the potential for effects will depend on the exact nature and design of any site allocations that come forward, which would not be known until the planning application stage.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	This policy option may result in the loss of best and most versatile land through the allocation of additional sites however by considering allocations across the whole of West Sussex the option allows greater opportunity to avoid or sensitively develop allocated sites. 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, and uncertain.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	This policy option supports the identification of new site allocations to meet the supply requirements set out in the LAA. 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. The exact nature of the effects will be uncertain until later in the planning process. As minerals currently travel across the West Sussex border, and the policy seeks to maintain supply levels, there may be a minimal increase in lorry movements as a whole.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	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 later in the planning process. As this option allows for the identification of sites across the whole of West Sussex there is greater potential to avoid or mitigate any impacts that could arise.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	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. 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.
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.	--?	This policy option supports the supply of soft sand from permitted reserves and potential site allocations 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 could increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. It is likely that extensions to existing sites might only be worked once the initial workings are complete. Therefore, overall, a potential negative effect is anticipated. However, this is uncertain as it will depend on the location of the site allocations and any level of imports that would be required to meet the demand in West Sussex, if there was a shortfall in supply.
14. To reduce the emissions of greenhouse gases.	-?	Allocating sites within West Sussex potentially reduces the need for additional importation of soft sand. The increased dependence on imports to meet requirements which cannot be met from indigenous supplies could result in increases in lorry traffic transporting material into West Sussex by road. Therefore, minor negative effects are expected due to increases in the emission of greenhouse gases. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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 later in the planning process.

Option E: B plus C plus D (Sites within West Sussex including the SDNPA plus supply from areas outside West Sussex and alternative sources)

This combination of options increases the deliverability of the strategy and reduces the uncertainty in relation to whether sites are deliverable and how much material may be available. Policies M2 and M11 and future reviews of the JMLP should take account of the availability of material in the wider South East and the potential of material to be dredged from the south coast.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score for E4	SA Score for E5	SA Score for E6
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	+/-?	+/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	+/-?	-?	+/-?
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	-/+?	-/+?	+/-?
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society.	+?	+?	+?
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	-?	-?	-?
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?	+/-?	+/-?
7. To protect and conserve geodiversity.	+/-?	+/-?	+/-?
8. To conserve, and where possible, enhance the historic environment.	+/-?	+/-?	+/-?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	-?	-?
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?	-?	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	?	?
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	--?	--?	-?
14. To reduce the emissions of greenhouse gases.	-?	-?	-?

Appendix 5: SA of Sites

Buncton Manor Farm

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Buncton Manor Farm	N	The site is currently in agricultural use and would yield approximately 1m tonnes of soft sand. It would be worked over a period of 10-15 years. There are a number of restoration options available.	High landscape sensitivity Impact on ancient woodland and listed buildings High and Medium risk of groundwater flooding and impact on aquifer Impact on AQMA Loss of agriculture Access Adjacent to landfill and nearby residential Cumulative impact	Buncton Manor is one of the sites likely to have the most severe cumulative impact, including transportation. It is highly visible within the landscape, particularly from Chanctonbury Ring, although the site itself is outside of the SDNP. There is potential for negative impact on PROW and soils.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?
7. To protect and conserve geodiversity.	0
8. To conserve, and where possible, enhance the historic environment.	--?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	-
14. To reduce the emissions of greenhouse gases.	-?

Chantry Lane

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Chantry Lane	E	The site would be an extension to existing workings and could yield approximately 1m tonnes of soft sand. There are a number of restoration options available that were considered in the West Sussex Landscape Capacity Study 2011.	Medium/high landscape sensitivity Adjacent to SSSI and RIGS Uncertain archaeological impacts Minimal impact on water environment AQMA Agricultural land Moderate transport impact	Chantry Lane may be slightly less sensitive in terms of landscape but there are a number of designations and known heritage assets that may be impacted on without sensitive working of the site. As an extension to an existing quarry some of the impacts may be easier to minimise.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
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
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	-
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	0
7. To protect and conserve geodiversity.	-?
8. To conserve, and where possible, enhance the historic environment.	-?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0
10. To reduce air pollution and to protect and, where possible, enhance air quality.	?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?
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.	--
14. To reduce the emissions of greenhouse gases.	-?

Coopers Moor

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Coopers Moor	E	Extension to Heath End sandpit which could yield 500,000 tonnes of soft sand. The site is currently woodland (birch regeneration and chestnut coppice). Restoration to wetland or woodland/agriculture.	Unacceptable landscape impact Adjacent to SNCIs and within 2km of SAC/SSS Major harm to listed buildings Potential impact on groundwater and surface water flooding AQMA Low impact on soil and transport Residential Amenity	Although development of this site may have minimal impact on soils and transport, there would be unacceptable harm to the landscape, designated areas, and heritage assets.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
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
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?
7. To protect and conserve geodiversity.	0
8. To conserve, and where possible, enhance the historic environment.	--?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	-
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	-
14. To reduce the emissions of greenhouse gases.	-?

Duncton Common

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Duncton Common	E	The site would be an extension to Heath End quarry and is currently formed of forestry and heathland. Restoration options include a mix of dry heath and wetland habitats.	Unacceptable landscape impact Severe harm to wet heathland, SNCI, BAP and SPA/Ramsar Potential major harm to SAM Potential impact on the water environment protection zone 2/3 AQMA Residential amenity Cumulative impact	Development of this site could not avoid an unacceptable landscape impact or severe harm to designated areas, heritage assets or the water environment.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?
7. To protect and conserve geodiversity.	0
8. To conserve, and where possible, enhance the historic environment.	--?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	--?
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	-
14. To reduce the emissions of greenhouse gases.	-?

East of West Heath

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
East of West Heath	E	Extension to existing quarry (would be worked after existing extraction site is worked out). This site could yield 950,000 tonnes of soft sand. It is currently in agricultural use and could be restored for informal recreation uses, including links to the wider footpath network	Medium landscape sensitivity Nearby to a number of local and national designations Visual impact on SAM Major aquifer, part of site in FZ2/3b and high risk of groundwater flooding. No AQMA impact No highway concerns Amenity impacts Cumulative impact	This site has a lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, water environment and cumulative impact. As an extension to an existing quarry the impacts may be easier to minimise.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	+?
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	-
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?
7. To protect and conserve geodiversity.	0
8. To conserve, and where possible, enhance the historic environment.	-?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	0
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	0
14. To reduce the emissions of greenhouse gases.	-?

Ham Fam

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Ham Farm	N	The site is currently in arable use with a number of isolated residential properties in the surrounding area. The site could yield approximately 725,000 tonnes of soft sand and could be restored to agricultural use.	Medium high landscape sensitivity Minor harm to ancient semi-natural woodland Moderate harm to listed buildings Compatible with the water environment Medium AQMA impact Grade 3 soils Minimal transport impact Residential amenity	This site has a lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, amenity, and cumulative impacts. This site was considered acceptable for allocation in the Submission JMLP.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-?
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	-
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	-?
7. To protect and conserve geodiversity.	0
8. To conserve, and where possible, enhance the historic environment.	-?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	--
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0?
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.	-
14. To reduce the emissions of greenhouse gases.	-?

Minsted West

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Minsted West	E[11]	The site is currently in agricultural use and could yield 2 million tonnes of soft sand. Potential restoration to nature conservation and heathland.	Medium/High landscape sensitivity National designations and potential hydrogeological impacts Within 200m of SAM Proximity to listed buildings and registered parks Moderate risk of groundwater flooding Impact on Iping Common SSSI Chichester AQMA Impact on residential amenity Cumulative impact (Severals E&W)	This site has a slightly lower landscape sensitivity than some of the other sites. It would require careful consideration of the designated areas, heritage assets, water environment and cumulative impact.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?
7. To protect and conserve geodiversity.	-?
8. To conserve, and where possible, enhance the historic environment.	--?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	--?
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	-?
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	-
14. To reduce the emissions of greenhouse gases.	-?

[11] Minsted West is no longer considered a functional extension due to the uncertainty around the existing site.

Severals East and West

Site Name	New (N)/Extension (E)	Site Summary	Key Constraints	SA Summary
Severals East	N	The site is currently used for commercial forestry and could yield 1m tonnes of soft sand. Potential for restoration includes linking with Midhurst Common/the Serpent Trail.	Medium-High landscape sensitivity Priority habitat and ancient woodland Potential minor harm to listed buildings Lidar/Moderate mitigation levels Vulnerable water impacts AQMA Moderate transport impact Sensitive amenity receptors High cumulative impact	Although development of this site may have a lower impact on soils and transport, there would potentially be unacceptable harm to the landscape, designated areas, and heritage assets. The site has been promoted jointly with Severals West.
Severals West	N	The site is currently used for commercial forestry and could yield 1m tonnes of soft sand. Potential for restoration includes linking with Midhurst Common/the Serpent Trail.	Medium-High landscape sensitivity Severals Bog SINC Potential minor harm to listed buildings Vulnerable water impacts – high risk of groundwater flooding AQMA Moderate transport impact Sensitive amenity receptors High cumulative impact	Although development of this site may have a lower impact on soils and transport, there would potentially be unacceptable harm to the landscape, water environment, designated areas, and heritage asset. The site has been promoted jointly with Severals East.

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	Indicative Score
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	0/-?
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	--?
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?
7. To protect and conserve geodiversity.	0
8. To conserve, and where possible, enhance the historic environment.	-?
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	--?
10. To reduce air pollution and to protect and, where possible, enhance air quality.	-?
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	--
12. To reduce vulnerability to flooding, in particular preventing inappropriate 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.	--
14. To reduce the emissions of greenhouse gases.	-?

Appendix 6 SA of Draft M2 and M11

Appraisal of New Draft M2

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score JMLP M2	SA Score SSR M2	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-?	-?	The original policy option supports both the maintenance of supplies from permitted reserves of soft sand and the identification of allocations in West Sussex beyond the SDNP It also supports allowing material from beyond the Plan Area to compensate for reduced extraction within West Sussex. The Revised M2 will support mineral extraction on sites allocated in a Revised policy M11, within a framework that refers directly to the mineral requirements set out in the Local Aggregate Assessment and distinguishes between development within the SDNP and within West Sussex. All mineral working has potential to 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. Reliance on material from outside of the Plan Area removes control the Plan can exercise over development. This option also increases the likelihood of additional traffic movements and potential associated health impacts. There may be less impact if material is landed at existing wharves. Allowing for some mineral extraction within the Plan Area, maintaining an existing supply, increases the potential for amenity impacts for local residents. These can be addressed through planning controls and other legislation. Selection of particular sites for allocation in Revised M11 will allow greater control of where any impacts may occur. Exact impacts will be difficult to assess until the application stage and policies within the wider JMLP provide a framework for planning decisions.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	+/-?	+/-?	The policy option could have minor negative effects on this SA objective Site allocations that could come forward under this policy option or increased imports could impact upon the amenity of users in the countryside, the value of open space and PROW. Conversely, recreational areas could be enhanced in the long term through the restoration of new mineral sites and so a minor potential positive effect is also identified. It is unlikely that sites containing existing permitted reserves would affect this SA objective. They are unlikely to result in any additional negative impacts on recreation, but they may offer enhancements through restoration proposals. Therefore, this option is likely to have mixed, minor positive and minor negative effects on SA Objective 2. The effects would be uncertain as the potential will depend on the exact nature and design of any site allocations/areas of search that come forward at the planning application stage.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+?	/-?	The policy option is likely to have uncertain effects on SA Objective 3. Minerals are essential to sustain and enhance the vitality and viability of the local economy and as this option allows for the continued working of minerals within West Sussex there may be some positive effects. If enough sites cannot be identified there may be a negative impact on this objective as jobs may move elsewhere. Jobs could be created to support the importation of materials.
4. To conserve minerals resources from inappropriate development whilst providing for the supply of aggregates and other minerals sufficient for the needs of society	+/-	+?	The exact effect on this objective will depend on the location and geographical spread of sites identified in Revised Policy M11 and if or where material is imported from outside the Plan Area. If viable resources are not properly considered within the SSR it is likely that minerals resources could be vulnerable to inappropriate development. 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 that could come forward would provide a robust framework for appropriate use of minerals.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	+/-?	+/-?	Revised M2 has the potential to have minor negative effects on SA Objective 5 as it seeks the allocation of extensions to existing sites within the SDNP, seeking to minimise the impacts on landscape designations in West Sussex. Furthermore, in the long term the restoration of sites containing permitted reserves and site allocations 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. Revised Policy M11 can set the parameters for any application that comes forward.

SA Objective	SA Score JMLP M2	SA Score SSR M2	Justification
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	+/-?	+?	The policy option is likely to have minor positive effects on SA Objective 6 in the long term 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. The allocation of sites for minerals working and mineral exploration may also have potential adverse effects on designated sites, protected species, or habitats during operation of those sites. These impacts may be avoided or mitigated through the planning system. The policy option is therefore likely to have mixed, minor positive and minor negative effects on SA Objective 6. 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 can be addressed at the planning application stage.
7. To protect and conserve geodiversity.	+/-?	+/-?	This policy option may lead to minor negative effects as the continued extraction of existing permitted reserves and/or working of permitted allocated 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 option is likely to have mixed, minor positive and minor negative effects on this SA objective. The effects would be uncertain depending 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.
8. To conserve, and where possible, enhance the historic environment.	+/-?	+/-?	This policy option is likely to have minor negative effects on SA Objective 8, 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 Furthermore, the policy options seeks to minimise the impact of mineral extraction on the SDNP, thereby giving protection to key landscape designations and their historic character and setting in West Sussex. Overall, the policy option is likely to have mixed, minor positive and minor negative effects on this SA objective. The 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.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-?	+/-?	It is unlikely that sites containing permitted reserves would affect SA Objective 9 as 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. This policy option may result in the loss of best and most versatile land through the allocation of additional sites, however the selection of sites for allocation will consider the potential impacts. The exact location and grade of agricultural land that might be lost and whether improvements to soil quality through site restoration.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	--?	-?	Revised M2 supports the supply of soft sand from permitted reserves and potential site allocations that may come forward. Additionally, it opens up the potential for increased imports by road which means this policy option is likely to have negative impacts on this SA objective Increased traffic may negatively affect air quality due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the Strategic Lorry Network.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	?	+/-?	This policy option may lead to allocation sites coming forward and minimises impacts in West Sussex by seeking additional resource from outside the Plan Area. This approach may affect the water resources, water quality or the function of the water environment in West Sussex at a more detailed stage but this will very much depend on sites proposals (location, design, method of working etc.), which would be assessed at the planning application stage.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	+?	+?	This policy option relates to soft sand extraction and is therefore not expected to have an effect on SA Objective 12, as sand and gravel workings are classed as water-compatible development. This type of development is potentially suitable for all flood zones including 3b, the functional floodplain. This also means any sites may have the potential to increase flood capacity and have minor positive effects on this SA objective. 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.
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.	--?	-?	This policy option supports the extraction of material and transporting extracted material by road. Any newly allocated sites that come forward may increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. Whether there is an increase in traffic or not will depend on the timing of this and other development. Planning applications should provide an assessment of the potential impact on traffic and air quality. Overall, a potential negative effect is anticipated. However, this is uncertain as set out above and exact effects will be determined at the planning application stage.

SA Objective	SA Score JMLP M2	SA Score SSR M2	Justification
14. To reduce the emissions of greenhouse gases.	+/--?	+/-?	This policy option may have minor positive effects on reducing the emission of greenhouse gases as it minimises new areas of extraction within the Plan Area. Any dependence on imports to meet requirements which cannot be met from local supplies could 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. It should be noted that the market for soft sand in West Sussex exports and imports soft sand across the boundary and therefore the impacts are less certain. 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.

Appraisal of New Draft M11

Refer to Figure 3 on page 13 for a key to the symbols and colour coding used in this table.

SA Objective	SA Score JMLP M11	SA Score SSR M11	Justification
1. To protect and, where possible, enhance health, wellbeing and amenity of residents, neighbouring land uses and visitors to West Sussex.	-	-?	The extraction of minerals at the allocated sites within Policy M11 could have minor negative impact on amenity for local residents and visitors. 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. The impact upon health at the allocation sites 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. The policy also safeguards the allocated sites from development on or adjoining the site that would prejudice its development. Overall, an uncertain minor negative effect is therefore likely as the policy is likely to impact upon health and wellbeing of local residents and visitors to West Sussex.
2. To protect and, where possible, enhance recreation opportunities for all, including access to the countryside, open spaces, and Public Rights of Way (PROW).	-	+/-?	There is potential for a minor negative effect from the site allocations supported by Policy M11 due to their locations in proximity to PROW. The policy includes specific site related development principles, which proposals at these allocated sites will need to include at the planning stage. The potential for negative impacts in the short term is balanced by the potential for improvements through the development and restoration stages of mineral developments. Development principles for the site allocations will set out clear expectations for each allocation.
3. To protect, sustain, and where possible, enhance the vitality and viability of the local economy.	+	+/-?	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, where a 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	+	+	New potential mineral sites 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.
5. To protect, and where possible, enhance the landscape, local distinctiveness, and landscape character in West Sussex.	--	0/-?	Each potential soft sand allocation is either within or nearby the South Downs National Park and will have a negative impact on the landscape within the lifetime of the developments. Restoration provides an opportunity to mitigate any impact and enhance the landscape. All potential soft sand allocations have been assessed as part of the Landscape Assessment 2019. The Landscape Assessment should inform the development principles for each site. Overall, the potential impacts are negative, neutral, or uncertain.
6. To protect, conserve and enhance biodiversity including natural habitats and protected species.	--?	-?	Suitable mitigation will be 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. Therefore, the policy should help to conserve natural habitats and protected species within the allocated mineral sites and those nearby including International Sites. Nonetheless, allocations include or are in close proximity to a local biodiversity site or habitat and as such, a negative effect is likely.
7. To protect and conserve geodiversity.	0/-	+/-?	This policy option may lead to minor negative effects as the extraction 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. The effects would be uncertain depending 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.

SA Objective	SA Score JMLP M11	SA Score SSR M11	Justification
8. To conserve, and where possible, enhance the historic environment.	--?	+/-?	This policy option is likely to have minor negative effects on SA Objective 8, 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. The policy option is likely to have mixed, minor positive and minor negative effects on this SA objective. The would be uncertain as the potential for effects will depend on the exact nature and design of any site allocations that come forward, which would not be known until the planning application stage but can be managed through the criteria set out in the development principles for each site allocation.
9. To protect and, where possible, enhance soil quality, and minimise the loss of best and most versatile land.	-	+/-?	It is unlikely that sites containing permitted reserves would affect SA Objective 9 as 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. Effects on this SA Objective are uncertain but unlikely to be significantly negative.
10. To reduce air pollution and to protect and, where possible, enhance air quality.	0/-	-?	Increased traffic may negatively affect air quality due to the proximity of sensitive receptors and the distance mineral related traffic has to travel before reaching the Strategic Lorry Network. It is appropriate to seek a project level HRA in respect of some of the potential site allocations. Effects on this SA objective are likely to be negative but development principles for each allocation should minimise the potential impacts.
11. To protect and, where possible, enhance water resources, water quality and the function of the water environment.	0/-?	?	Some of the potential site allocations could impact on water resources. Allocated sites may affect the water resources, water quality or the function of the water environment in West Sussex at a more detailed stage but this will very much depend on sites proposals (location, design, method of working etc.), which would be assessed at the planning application stage. Development principles for each allocation can avoid, mitigate, and minimise any impacts.
12. To reduce vulnerability to flooding, in particular preventing inappropriate development in the floodplain.	0/-?	+?	This policy option relates to soft sand extraction and is therefore not expected to have an effect on SA Objective 12, as sand and gravel workings are classed as water-compatible development. This type of development is potentially suitable for all flood zones including 3b, the functional floodplain. This also means any sites may have the potential to increase flood capacity and have minor positive effects on this SA objective. 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.
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/-?	-?	Any newly allocated sites that come forward may increase lorry traffic especially given that within West Sussex, materials are mainly transported by road, and to a lesser extent rail. Whether there is an increase in traffic or not will depend on the timing of this and other development. Planning applications should provide an assessment of the potential impact on traffic and air quality. Overall, a potential negative effect is anticipated. However, this is uncertain as set out above and exact effects will be determined at the planning application stage.
14. To reduce the emissions of greenhouse gases.	+/-	+/-?	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. Therefore, overall, a mixed minor positive/minor negative effect is likely. At this stage in the planning process, it is not possible to accurately 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.