



**Nottinghamshire
Minerals Local Plan**

**Sustainability Appraisal
Issues and Options
2018**

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Non-technical summary

Introduction

This report explains the process and outcomes of the Sustainability Appraisal (SA) of the Nottinghamshire Minerals Local Plan Issues and Options consultation document prepared by Nottinghamshire County Council.

We are required to carry out this SA process in order to assess the likely effects of the Minerals Local Plan, in line with national and international law. In the UK this includes looking at the likely social and economic, as well as environmental, effects. The SA process is therefore a way of ensuring that all plans and programmes which relate to spatial planning and land use are compatible with the aims of sustainable development.

Sustainability Appraisal / Strategic Environmental Assessment stages

A SA scoping report has been completed prior to this report to provide the basis for this SA. This comprised:

- review of all relevant plans, policies and programmes; and
- establishing the baseline characteristics of the Plan area, the key issues it faces and the SA objectives against which the Minerals Local Plan is to be assessed.

This SA will be followed by a series of other interim SA reports on various stages of plan production before the publication of a final SA report which will assess the proposed submission draft of the Minerals Local Plan.

Conclusions of SA

The SA process identified that whilst the vision has a positive impact on half of the SA objectives, there was either a negative impact on, or no clear link with, the remainder. This indicates that a range of issues had not been adequately addressed so the SA recommends that the wording of the vision be altered to take these issues into account.

The SA concludes that the proposed key strategic issues for the Minerals Local Plan are compatible with the SA objectives. There were several instances where there was no relationship between the key strategic objectives and some of the SA objectives, but this was to be expected given the broad range of issues covered. However it was found that some of the matters covered by the SA objectives were not addressed by the key strategic issues so the SA recommends that they are revised to take this into account.

There was uncertainty involved about the effects of many of the options on a number of the SA objectives, however this was unavoidable due to the general nature of, and lack of detail in, the options at this stage.

Next steps

The findings of this SA will inform the preparation of the next stage of the Minerals Local Plan, which will be the Draft Plan.

1. Introduction

The Minerals Local Plan

- 1.1 Nottinghamshire County Council published the Minerals Local Plan Issues and Options consultation document in November 2017. This set out the issues which the County Council considered required addressing in the preparation of the new Minerals Local Plan (MLP), and the possible options to deal with them. To aid the consultation process a series of questions was presented at the end of each issue and options section.
- 1.2 In order to assess which of the options would represent the most sustainable approach to dealing with each issue a sustainability appraisal (SA) was carried out. This SA will inform the next stage of the Minerals Local Plan – the Draft Plan. Although it is not exclusively the role of the SA to determine which of the options should be chosen as the basis of the Draft Plan, it does serve as a very important factor in the decision-making by, as far as possible, identifying the most sustainable options overall in terms of the SA objectives and providing useful information on the relative sustainability performance of the range of options considered.

Requirement for Strategic Environmental Assessment (SEA)

- 1.3 The EU Strategic Environmental Assessment (SEA) Directive (2001/42/EC) came into force in the UK on 20 July 2004 through the Environmental Assessment of Plans and Programmes Regulations 2004. This requires the assessment of the effects of certain plans and programmes on the environment which includes minerals local plans because of the likely significant effects they might have on the environment.
- 1.4 The Directive and Regulations state that the SEA must consider biodiversity, population, human health, flora and fauna, soil, water, air, climatic factors, material assets, cultural heritage, landscape and the interrelationship between these factors.

Requirement for Sustainability Appraisal

- 1.5 All local plans, including those for minerals, are required to complete a SA under S19 (5) of the Planning and Compulsory Purchase Act 2004. The purpose of the SA is to promote sustainable development through better integration of sustainability considerations in the preparation and adoption of plans. SA helps local planning authorities to ensure that sustainable development is considered in the preparation of their plans. The National Planning Policy Framework (2012) (NPPF) introduced a 'presumption in favour of sustainable development' as a 'golden thread' which should run through plan-making and decision-making.

Sustainability Appraisal process

- 1.6 Although the requirements to complete SEA and SA are distinct, the two processes are similar, with the main difference being that SEA focuses on environmental effects whereas SA involves not only environmental effects, but also social and economic impacts. Provided that a SA fully incorporates the requirements of the European Directive on SEA there is no need to carry out a separate SEA. This report therefore refers to both processes as SA for simplicity.

2. Sustainability appraisal methodology

Introduction

- 2.1 To ensure a robust SA that complies with current legislation and best practice the guidelines set out in the documents listed below were followed:
- Office of the Deputy Prime Minister (2005) 'A Practical Guide to the Strategic Environmental Assessment Directive'
 - Planning Advisory Service (2010) 'Sustainability Appraisal – Advice Note'
 - Ministry of Housing, Communities and Local Government (online guidance) 'Planning Practice Guidance: Strategic Environmental Assessment and Sustainability Appraisal'.

2.2 The SA is based on a five stage approach as outlined in Table 2.1.

Table 2.1: Stages in the SA process

Stage A Setting the context and the SA objectives. Establishing the baseline and deciding on the scope.
Stage B Developing and refining options. Assessing effects.
Stage C Preparing the Sustainability Appraisal Report.
Stage D Consultation on the Sustainability Appraisal Report (alongside the Draft Plan).
Stage E Post- adoption reporting. Monitoring the implementation of the Plan and responding to adverse effects.

Stage A: The Scoping Report

- 2.3 Stage A of the process was completed with the production of the Sustainability Appraisal Scoping Report. It was widely consulted upon, including with the statutory consultees, which are the Environment Agency, Natural England and Historic England. Internal experts were consulted on issues such as landscape and biodiversity.
- 2.4 All relevant plans, policies and programmes were reviewed to identify the relationships between the Minerals Local Plan and publications on environmental, social and economic issues. The baseline characteristics of the Plan area, the key issues it faces and the SA objectives against which the Plan would be assessed were established. The Scoping Report, published in November 2017, provides the framework for carrying out the SA.
- 2.5 The SA objectives and decision-making criteria used to help assess the likely effects of the Plan on sustainability are set out in Table 2.2.

Table 2.2: SA objectives and decision-making criteria

Objective	Decision making criteria
1. Ensure that adequate provision is made to meet local and national mineral demand.	<ul style="list-style-type: none"> • Will the plan/proposal identify adequate resources to meet local and national requirements over the plan period? • Will it identify suitable areas of land to serve current/future markets?
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	<ul style="list-style-type: none"> • Will the plan/proposal have an adverse affect on internationally, nationally or locally important sites or legally protected species? • Will it affect habitats or species identified within the Nottinghamshire Local Biodiversity Action Plan (LBAP)? • Will it restore or create new habitat in line with LBAP priorities? • Will it support the retention/enhancement of the County's green infrastructure?
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	<ul style="list-style-type: none"> • Will the plan/proposal reduce overall transport distances for minerals? • Will it reduce road haulage of minerals? • Will it promote alternative forms of transport? • Will it reduce/increase road congestion? • Will it result in sites that are well related to the main highway network? • Will it require new transport infrastructure to be developed?
4. Protect the quality of the historic environment, heritage	<ul style="list-style-type: none"> • Will the plan/proposal have an adverse impact upon heritage assets and/or their settings, including archaeological remains and historic buildings?

Objective	Decision making criteria
assets and their settings above and below ground.	<ul style="list-style-type: none"> •Will it conserve and/or enhance heritage assets and the historic environment? •Will it respect, maintain and strengthen local character and distinctiveness? •Will it enhance or increase our understanding of the historic environment?
5. Protect and enhance the quality and character of our townscape and landscape.	<ul style="list-style-type: none"> •Will the plan/proposal have an adverse impact on local landscape character or areas of important townscape? •Will it have an adverse effect on the openness and visual amenity of the Green Belt? •Will it affect areas of public open space? •Will it lead to landscape/townscape improvements? •Will it result in development that is sympathetic to its surroundings in terms of design, layout and scale? •Will it contribute to the availability of local building materials to enable local distinctiveness to be retained in conservation projects and reflected in new development?
6. Minimise impact and risk of flooding.	<ul style="list-style-type: none"> •Will the plan/proposal increase the risk of flooding? •Will it help to alleviate flood risk or the impact of flooding? •Will it seek to avoid flood risk?
7. Minimise any possible impacts on, and increase adaptability to, climate change.	<ul style="list-style-type: none"> •Will the plan/proposal increase emissions of greenhouse gases from minerals development? •Will it reduce emissions of greenhouse gases?

Objective	Decision making criteria
	<ul style="list-style-type: none"> •Will it encourage the use of renewable energy sources? •Will it help to reduce our vulnerability to the impacts of climate change? •Will it help to increase the resilience of flora and fauna to climate change?
8. Protect high quality agricultural land and soil.	<ul style="list-style-type: none"> •Will the plan/proposal have an adverse impact on soil quality? •Will it result in the sustainable use of soils? •Will it lead to land contamination? •Will it lead to the irreversible loss of best and most versatile agricultural land?
9. Promote more efficient use of land and resources	<ul style="list-style-type: none"> •Will the plan/proposal promote the sustainable use of primary minerals? •Will it encourage the use of recycled and secondary aggregates? •Will it prevent the sterilisation of important mineral resources? •Will it make use of previous developed land? •Will it utilise existing infrastructure or minimise the need for additional infrastructure and land take?
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	<ul style="list-style-type: none"> •Will the plan/proposal minimise energy needs? •Will it contribute to renewable/low carbon energy targets?
11. Protect and improve local air quality.	<ul style="list-style-type: none"> •Will the plan/proposal have an adverse impact on local air quality through the creation of dust or emissions of pollutants from facilities and transport?

Objective	Decision making criteria
	<ul style="list-style-type: none"> • Will it adversely affect a designated Air Quality Management Area (AQMA)?
<p>12. Protect and improve water quality and promote efficient use of water.</p>	<ul style="list-style-type: none"> • Will the plan/proposal have an adverse impact upon water quality? • Will it increase demand for water? • Will it help to improve existing water quality? • Will it incorporate sustainable water management and/or drainage?
<p>13. Support wider economic development and promote local job opportunities.</p>	<ul style="list-style-type: none"> • Will the plan/proposal help to increase training and employment opportunities in Nottinghamshire? • Will it help to enable wider economic development?
<p>14. Protect and improve human health and quality of life.</p>	<ul style="list-style-type: none"> • Will the plan/proposal minimise adverse impacts of minerals activity on human health and quality of life and minimise levels of nuisance including dust, particulate emissions, noise (including traffic noise), vibration, visual amenity and light pollution. • Will it promote best practice in the operation and restoration of sites? • Will it help to enhance health and wellbeing through the provision of new or improved public open space/recreational space and access? • Will it lead to a loss of public open space/recreational space or reduction in public access?

The Appraisal

- 2.6 A sustainability appraisal (SA) of the options put forward in the Issues and Options consultation document, together with appraisal of the vision and key strategic issues underpinning the MLP, was undertaken in accordance with Stage B of the SA process. This document is an interim report which sets out the results of the SA at the Issues and Options stage of the MLP.
- 2.7 Assessment involved consideration of the many complex issues and inter-relationships involved in sustainability and relied on professional judgement which inevitably has an element of subjectivity. The effects could only be assessed at a very general level due to the unavoidable lack of detail at this early stage of the Plan.
- 2.8 A qualitative seven point scale, as set out in Table 2.3, was used to evaluate the likely effects of the vision/options on the SA objectives. A four point scale, as set out in Table 2.4, was used to evaluate the compatibility of the key strategic issues, which will form the basis of the MLP's strategic objectives, with the SA objectives.

Table 2.3: Scale of Effects (Vision and Options)

Symbol	Likely effect on the SA Objective
++	The vision/option is likely to have a very positive impact
+	The vision/option is likely to have a positive impact
0	No significant effect / no clear link
?	Uncertain or insufficient information on which to determine impact
-	The vision/option is likely to have a negative impact
--	The vision/option is likely to have a very negative impact
	The vision/option could have a positive or a negative impact depending on how it is implemented

Table 2.4: Scale of Effects (Key Strategic Issues)

Symbol	Relationship with the Sustainability Appraisal Objective
+	Compatible
0	Not related
?	Unknown or dependent on implementation
-	Incompatible

- 2.9 The findings of the SA were recorded in matrices, which can be found in Chapter 3 and Appendix A of this report.

3. Appraisal Results

Appraisal of the Vision

- 3.1 The Minerals Local Plan will be guided by an overall vision setting out how the minerals industry can continue to provide the raw materials that are needed in the most sustainable way. The proposed vision was set out in the Issues and Options consultation document. This vision was appraised against the 14 SA objectives listed in Table 2.2 and the results are shown in Table 2.5.
- 3.2 The appraisal found that the vision had a positive impact on half of the SA objectives, however there was either a negative impact on, or no clear link with, the remainder, indicating that they had not been adequately addressed. The vision therefore fails to impart a sustainable overall approach to minerals development and it is recommended that the vision is revised to fully take into account the issues which are covered by the following SA objectives:
- 5. (protect and enhance the quality and character of our townscape and landscape)
 - 6. (minimise impact and risk of flooding)
 - 7. (minimise any possible impacts on, and increase adaptability to, climate change)
 - 8. (protect high quality agricultural land and soil)
 - 10. (promote energy efficiency and maximise renewable energy opportunities)
 - 11.(protect and improve local air quality)
 - 12. (protect and improve water quality and promote efficient use of water).

Table 2.5: Appraisal of the Vision

VISION:
Minerals are a valuable natural resource and over the Plan period to 2036 will continue to be used as efficiently as possible across Nottinghamshire. This will include sustainable use of primary minerals as well as the promotion of recycled and secondary aggregates.
Within geological constraints, mineral development will be concentrated in locations that offer the greatest level of accessibility to the major markets and growth areas and to sustainable transport nodes to encourage sustainable patterns and modes of movement.
Nottinghamshire will continue to provide minerals to meet its share of local and national needs. Potential sites/quarries will be identified to support the economic, social and environmental benefits of sustainable growth. Mineral reserves will be identified and safeguarded against inappropriate development.
All mineral workings will contribute towards a greener Nottinghamshire by ensuring that the County's diverse environmental and historic assets are protected, maintained and enhanced through appropriate working, restoration and after-use. This will result in improvements to the built and natural environment, and contribute to landscape-scale biodiversity delivery; and the re-connection of ecological networks.
The quality of life and health of those living, working in, or visiting Nottinghamshire will be protected.

Sustainability Appraisal Objectives	Effect	Commentary
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	The vision states that minerals provision will be made to meet Nottinghamshire's share of local and national needs, which will make a very positive contribution towards meeting demand.
2. Protect and enhance biodiversity at all levels and safeguard features of	+	The vision seeks to ensure that Nottinghamshire's environmental assets are protected, maintained and enhanced through appropriate working, restoration and after-use which will contribute to landscape-scale biodiversity delivery and reconnection of ecological

geological interest.		networks.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+	The vision states that, within geological constraints, mineral development will be concentrated in locations with the greatest accessibility to major markets and growth areas and to sustainable transport nodes to encourage sustainable patterns and modes of movement.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	+	The vision seeks to ensure that Nottinghamshire's historic assets are protected, maintained and enhanced through appropriate working, restoration and after-use.
5. Protect and enhance the quality and character of our townscape and landscape.	0	This matter is not explicitly addressed in the vision, although it does state that environmental assets will be protected, which could include landscape.
6. Minimise impact and risk of flooding.	-	This matter is not addressed in the vision.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	-	This matter is not addressed in the vision.
8. Protect high quality agricultural land and soil.	-	This matter is not addressed in the vision.
9. Promote more efficient use of land and resources.	+	The vision states that minerals will be used as efficiently as possible across Nottinghamshire, including through the sustainable use of primary minerals and by promoting the use of secondary and recycled minerals.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	-	This matter is not addressed in the vision.
11. Protect and improve local	0	This matter is not addressed directly in the vision, although there is a link with its stated

air quality.		aim to protect Nottinghamshire's environmental assets.
12. Protect and improve water quality and promote efficient use of water.	0	This matter is not addressed directly in the vision, although there is a link with its stated aim to protect Nottinghamshire's environmental assets.
13. Support wider economic development and promote local job opportunities.	++	Provision of minerals to meet Nottinghamshire's share of local and national needs will contribute to the support of the wider economy and the working of sites in order to do so will provide local job opportunities.
14. Protect and improve human health and quality of life.	+	The vision states that the quality of life and health of those living and working in, or visiting, Nottinghamshire will be protected.

Compatibility of the Minerals Local Plan's Key Strategic Issues with the SA Objectives

- 3.3 The Issues and Options consultation document set out five key strategic issues for the Minerals Local Plan which will form the basis of the Plan's objectives which will need to be met in order to deliver the vision over the Plan period. These key strategic issues were evaluated against the 14 SA objectives listed in Table 2.2 to allow for the identification of any tensions or conflicts between them, as shown in Table 2.6.
- 3.4 No incompatibility was found between the proposed Minerals Local Plan's (MLP) key strategic issues and the SA objectives. There were several instances where there was no relationship between the MLP's key strategic issues and some of the SA objectives but this was to be expected given the broad range of issues covered.
- 3.5 There were 3 key strategic issues where the relationship with one or more of the SA objectives was unknown or dependent on implementation:
- Key strategic issue 2 (providing a steady and adequate supply of minerals) with all the SA objectives except 1 (ensure adequate provision is made to meet local and national mineral demand) and 13 (support wider economic development and promote local job opportunities). The relationship with the other SA objectives was found to be dependent on how the supply of minerals is met (i.e. specific site and location impacts);
 - Key strategic issue 3 (minimising impacts on communities) with SA objective 3 (promote sustainable patterns of movement and the use of more sustainable modes of transport) as it would be dependent on whether the measures required to protect communities were consistent with sustainable patterns or modes of transport (i.e. the use of conveyors would be compatible, but the routing of lorries to avoid communities, and in doing so taking a longer route, could be considered incompatible);
 - Key strategic issue 4 (Biodiversity led restoration of worked out quarries) with SA objectives 1 (ensure adequate provision is made to meet local and national mineral demand) and 8 (protect high quality agricultural land and soil). Minerals development by its very nature can have a negative impact on biodiversity, but this need not necessarily be the case depending on site location, operational considerations and the nature of restoration. Compatibility of restoration for biodiversity and restoration to provide agricultural land would depend on whether the type of agricultural land involved provided any habitats of biodiversity value.
- 3.6 Every key strategic issue was compatible with a number of SA objectives. The key strategic issues seek to support the economy (2 and 5) whilst encouraging sustainable use of resources and patterns of development (1), maximising biodiversity gain through restoration (4)

and minimising the impact on communities (3). These 5 key strategic issues therefore contribute positively to sustainability.

3.7 However, there are significant gaps in the coverage of these key strategic issues in terms of addressing all of the SA objectives. It is therefore recommended that revised key strategic issues are formulated, or Plan objectives are developed, which address the issues outlined in the following SA objectives:

- 4. (protect the quality of the historic environment, heritage assets and their settings above and below ground)
- 5. (protect and enhance the quality and character of our townscape and landscape)
- 6. (minimise impact and risk of flooding)
- 7. (minimise any possible impacts on, and increase adaptability to, climate change)
- 8. (protect high quality agricultural land and soil)
- 10.(promote energy efficiency and maximise renewable energy opportunities)
- 11.(protect and improve local air quality)
- 12.(protect and improve water quality and promote efficient use of water).

Table 2.6: Compatibility of the Minerals Local Plan’s Key Strategic Issues with the Sustainability Appraisal Objectives

Plan’s Key Strategic Issues (abbreviated)	Sustainability Appraisal Objectives													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Improving the sustainability of minerals development.	+	0	+	0	0	0	+	0	+	0	+	0	+	+
2. Providing a steady and adequate supply of minerals.	+	?	?	?	?	?	?	?	?	?	?	?	+	?
3. Minimise impacts on communities.	0	0	?	0	+	+	0	0	0	0	+	+	0	+
4. Biodiversity led restoration of worked out quarries.	?	+	0	0	+	+	+	?	0	0	+	+	0	+
5. Safeguarding of minerals from unnecessary sterilisation.	+	0	0	0	0	0	0	0	+	0	0	0	+	0

Appraisal of the Options

- 3.8 The Issues and Options consultation document set out 15 issues and outlined the options for each. These options were set out explicitly within matrices for the purposes of undertaking the SA. The options for each issue were assessed against the 14 SA objectives listed in Table 2.2 and the predicted significant effects were recorded in accordance with the Scale of Effects shown in Table 2.3. The decision-making criteria set out in Table 2.2 were taken into account and a commentary was provided to explain the reasoning behind each predicted effect. In each case the effect attributed against each SA objective in the appraisal matrices reflects a judgement as to what is considered to be the most significant effect overall. The issues and options appraisal matrices are reproduced in full in Appendix A, but an example of the matrix used can be found in Table 2.7.
- 3.9 A summary of the findings for each issue is presented in Table 2.8. and the option which was considered most sustainable for each issue is highlighted. However, it should be noted that the individual sustainability appraisal matrix for each issue needs to be referred to for full details, particularly as in some cases the favoured option scored only marginally better than others and /or the conclusion was based on differences between only a few of the SA objectives because many impacts were uncertain due to the inevitable lack of detail at this stage.

Table 2.7 Issues and Options Appraisal Matrix

ISSUE :

Sustainability Appraisal Objectives	Option A:		Option B:		Option C:		Option D:	
1. Ensure that adequate provision is made to meet local and national mineral demand.								
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.								
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.								
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.								
5. Protect and enhance the quality and character of our townscape and landscape.								
6. Minimise impact and								

risk of flooding.								
7. Minimise any possible impacts on, and increase adaptability to, climate change.								
8. Protect high quality agricultural land and soil.								
9. Promote more efficient use of land and resources.								
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.								
11. Protect and improve local air quality.								
12. Protect and improve water quality and promote efficient use of water.								
13. Support wider economic development and promote local job opportunities.								
14. Protect and improve human health and quality								

of life.								
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Table 2.8 Summary of Issues and Options Appraisal Findings

ISSUE	SUSTAINABILITY APPRAISAL FINDINGS
<p>1. <i>How should we forecast future demand for aggregates over the Plan period?</i></p>	<ul style="list-style-type: none"> • The likely impact of all 4 options was uncertain in terms of many of the SA objectives which covered specific environmental issues, for example, biodiversity and landscape. This was due to the lack of detail at this stage. • However there were significant differences between the options in relation to SA objectives 1 (ensure adequate provision of minerals to meet demand), 8 (protect high quality agricultural land and soil), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities). • For SA objective 1 it was considered that the likely impact of Option A would be positive, B would be very negative, C would be very positive and there was insufficient information for D on which to determine impact. • For SA objective 8 Option B was positive, Options A and D were negative, and C was very negative. • For SA objective 9 both options A and D were positive, whilst B and C were negative. • For SA objective 13 both options A and C were positive, B was very negative and there was insufficient information for D on which to determine impact. • Options B and D therefore scored less favourably than A and C. Although C was very positive for SA objective 1 it was noted that this option could actually result in oversupply of aggregates, which was reflected in its very negative score on the potential loss of high quality agricultural land and negative impact on promoting more efficient use of land and resources. Option A is therefore considered to be more favourable in sustainability terms than Option C. <p>Option A: ‘Use the Local Aggregates Assessment (LAA) average 10 year sales figure for all types of aggregates’ was considered to be the most sustainable.</p>

<p>2. <i>What approach should be adopted when identifying adequate minerals provision in the Plan?</i></p>	<ul style="list-style-type: none"> • The likely impact of all of the options was uncertain on SA objectives 2 (biodiversity/geodiversity), 4 (historic environment), 5 (landscape/townscape), 6 (flooding), 7 (climate change), 8 (high quality agricultural land/soil), 10 (efficiency/renewable energy) and 14 (human health/quality of life) due to the lack of detail in the options which is inevitable at this stage. • On SA objective 1 (adequate mineral provision) Options A, B and C had a very positive impact, Option E had a positive impact and Option D could have a positive or negative impact depending on how it would be implemented. Similarly, Options A, B and C had a positive impact on SA objective 13 whilst the impact of Options D and E was uncertain. So in terms of the economic aspects of sustainability Options A, B and C scored equally favourably. • On SA objective 3 (sustainable transport) the effect of Options A, B and C could be positive or negative depending on how they would be implemented, whilst the impact of Options D and E was uncertain. • Option A had a positive impact on SA objective 9 (efficient use of land/resources) as it would involve utilising existing infrastructure, whereas Option B, requiring the creation of new infrastructure, had a negative impact. Options C and E could have a positive or negative impact depending on how they would be implemented, whilst the impact of Option d was uncertain. • Each of the options had similar impacts on SA objectives 11 (air quality) and 12 (water quality/efficient use of water) with Option A having no significant effect and the effect of Options C, D and E being uncertain on both objectives. Option B could have a positive or negative impact on objective 11 depending on how it would be implemented and a negative impact on objective 12 due to the potential to create new sources of contamination. <p>Option A: ‘Prioritise extensions to existing permitted quarries’ was considered to be the most sustainable.</p>
<p>3. <i>What should the Plan’s approach be</i></p>	<ul style="list-style-type: none"> • There was uncertainty as to the likely impact of all of the options on half of the

<p><i>to the location of future sand and gravel quarries?</i></p>	<p>SA objectives (2, 4, 5, 6, 8, 10 and 12) due to the lack of detail at this stage.</p> <ul style="list-style-type: none"> • The impacts of Options A, B, C and D on SA objective 1 were very positive as they should all ensure adequate mineral provision is made and similarly, on SA objective 13, in terms of wider economic development and local job opportunities, they were all positive. Option E's impact on SA objective 1 could be positive or negative depending on how it is implemented and on SA objective 13 is uncertain. • Options A and C had a positive impact on SA objectives 3 (sustainable patterns of movement/modes of transport), 7 (climate change), 11 (air quality) and 14 (human health/quality of life) whilst the impact of the other options on these objectives was uncertain. <p>Options A 'Geographical spread across the County' and C 'Prioritise locations with potential for transporting sand and gravel by river barge' were considered to be the most sustainable.</p>
<p>4. What should the Plan's approach be to the location of future Sherwood Sandstone quarries?</p>	<ul style="list-style-type: none"> • The likely impact of all of the options was uncertain on SA objectives 2 (biodiversity/geodiversity), 4 (historic environment), 5 (landscape/townscape), 6 (flooding), 7 (climate change), 8 (high quality agricultural land/soil), 10 (efficiency/renewable energy) and 14 (human health/quality of life) due to the lack of detail in the options which is inevitable at this stage. • On SA objective 1 (adequate mineral provision) Options A, B and C had a very positive impact, Option E had a positive impact and Option D could have a positive or negative impact depending on how it would be implemented. Similarly, Options A, B and C had a positive impact on SA objective 13 whilst the impact of Options D and E was uncertain. So in terms of the economic aspects of sustainability Options A, B and C scored equally favourably. • On SA objective 3 (sustainable transport) the effect of Options A, B and C could be positive or negative depending on how they would be implemented, whilst the impact of Options D and E was uncertain.

	<ul style="list-style-type: none"> • Option A had a positive impact on SA objective 9 (efficient use of land/resources) as it would involve utilising existing infrastructure, whereas Option B, requiring the creation of new infrastructure, had a negative impact. Options C and E could have a positive or negative impact depending on how they would be implemented, whilst the impact of Option d was uncertain. • Each of the options had similar impacts on SA objectives 11 (air quality) and 12 (water quality/efficient use of water) with Option A having no significant effect and the effect of Options C, D and E being uncertain on both objectives. Option B could have a positive or negative impact on objective 11 depending on how it would be implemented and a negative impact on objective 12 due to the potential to create new sources of contamination. <p>Option A: ‘Prioritise extensions to existing permitted quarries’ was considered to be the most sustainable.</p>
<p>5. <i>Whilst there is currently no evidence to suggest that there will be a shortage of crushed rock reserves over the Plan period, if additional reserves will be required to meet demand this needs to be addressed in the Plan.</i></p>	<ul style="list-style-type: none"> • The likely impact of all 3 options was uncertain in terms of many of the SA objectives, particularly those covering specific environmental issues, such as biodiversity and landscape, due to the lack of detail at this stage. • There was no clear link between Option A and SA objective 10 (promote energy efficiency and maximise renewable energy opportunities) whilst for the other options the impact was uncertain as it would be dependent on the details of criteria in the policy. • There were differences between the options in respect of SA objectives 1 (ensure adequate provision of minerals to meet demand), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities). • For SA objective 1 both Options A and B were considered to have a positive impact as allocation of sites/extensions would ensure the potential for demand to be met, whilst, in the case of B, allowing for additional provision if needed would ensure demand could be met. Consequently, Option C, being a

	<p>combination of A and B scored very positively.</p> <ul style="list-style-type: none"> • For SA objective 9 it was considered that both Options A and C could have either a positive or a negative impact as extensions would be efficient in terms of use of land but new sites would not. The impact was uncertain for Option B as it would be dependent on the details of the criteria in the policy. • For SA objective 13 the impact of Option B was again uncertain for the same reason, but it was positive for both Options A and C. • Overall, Options A and C scored more favourably than Option B and Option C scored marginally more favourably than Option A, having a very positive impact, rather than just a positive impact, on SA objective 13. <p>Option C: ‘Combination of site allocations and criteria-based policy (subject to need)’ was considered to be the most sustainable.</p>
<p>6. <i>How should the Plan deal with alternative aggregates? There is limited opportunity for further growth, although new technology could bring about new methods/demand in the future.</i></p>	<ul style="list-style-type: none"> • There was no clear link between either Option A or Option B and SA objectives 6 (minimise impact and risk of flooding), 11 (protect local air quality) and 12 (protect water quality). The impact of both options was uncertain on SA objectives 3 (promote sustainable patterns of movement/ use of sustainable transport), 8 (protect high quality agricultural land and soil) and 14 (protect human health and quality of life). • Both options were considered to have the potential for either a positive or a negative impact on SA objective 2 (protect biodiversity) as if the need for primary aggregates were to be reduced potentially fewer natural habitats would be adversely affected but, conversely, disturbing colonised sources of secondary aggregates could have a negative impact. • Both options were positive in their impact on SA objective 1 (ensure adequate provision of minerals to meet demand). • For all the remaining SA objectives, which related to environmental and economic issues, Option A was positive whereas for Option B the impact was uncertain as it would be dependent on the level of use of alternative

	<p>aggregates determined by market forces.</p> <p>Option A: 'Include a policy to promote the use of alternative aggregates' was considered to be the most sustainable.</p>
<p>7. How should brick clay reserves and brick works be identified to ensure adequate supply over the Plan period?</p>	<ul style="list-style-type: none"> • The likely impact of all 3 options was uncertain in terms of many of the SA objectives, particularly those covering specific environmental issues, such as biodiversity and the historic environment, due to the lack of detail at this stage. • However for SA objective 3 (promote sustainable patterns of movement and modes of transport) it was considered that Options A and C could have a positive or negative impact as extensions would be nearer to the brickworks and could use existing haulage roads/conveyor belts, whereas new sites could require longer haulage routes to the brickworks. • The potential for a positive or negative impact was also the case for both Options A and C in relation to SA objective 9 (promote more efficient use of land and resources) due to the more efficient use of land that would result from extensions being permitted rather than the potential negative impact of greenfield sites. • For SA objectives 1 (ensure adequate minerals provision to meet demand) and 13 (support wider economic development and promote local job opportunities) Options A and C had a very positive impact. Option B's impact on SA objective 1 could be positive or negative, as there would be a risk that demand would not be met but it would allow for flexibility, and on 13 was uncertain as the details of the criteria in the policy are unknown at this stage. <p>Options A: 'Allocate sites/extensions' and C: 'Combination of allocations and criteria-based policy' were considered to be the most sustainable.</p>
<p>8. How should adequate gypsum reserves be identified to meet demand over the Plan period?</p>	<ul style="list-style-type: none"> • The likely impact of both options was uncertain in terms of many of the SA objectives, particularly those covering specific environmental issues, such as biodiversity and the historic environment, due to the lack of detail at this stage.

	<ul style="list-style-type: none"> • However for SA objective 3 (promote sustainable patterns of movement and modes of transport) and 9 (promote more efficient use of land and resources) it was considered that Option A could have a positive or negative impact depending on whether allocations would comprise extensions or new sites. • For SA objectives 1 (ensure adequate minerals provision to meet demand) and 13 (support wider economic development and promote local job opportunities) Option A had a very positive impact. Option B's impact on SA objective 1 could be positive or negative, as there would be a risk that demand would not be met but it would allow for flexibility, and on 13 was uncertain as the details of the criteria in the policy are unknown at this stage. <p>Option A: 'Allocate sites/extensions' was considered to be the most sustainable.</p>
<p>9. <i>Whilst there should not be a shortage of silica sand reserves over the Plan period, if additional reserves will be required to meet demand how should this be addressed in the Plan?</i></p>	<ul style="list-style-type: none"> • The likely impact of all 3 options was uncertain for all of the SA objectives, except SA objectives 1 (ensure adequate provision of minerals to meet demand) and 13 (support wider economic development and promote local job opportunities), due to the lack of detail at this stage. • Distinguishing between the likely effects of the 3 options therefore was restricted to SA objectives 1 (ensure adequate provision of minerals to meet demand), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities). • For SA objective 1 both Options A and B were considered to have a positive impact whereas Option C had a negative effect. • For SA objective 13 the impact of Options A and B was positive but Option C's impact was negative. <p>Options A: 'Criteria based policy subject to need for additional provision' and B: 'Identify broad locations' were considered to be the most sustainable.</p>
<p>10. <i>Industrial dolomite extraction has not taken place in Nottinghamshire</i></p>	<ul style="list-style-type: none"> • The impact of both options on many of the SA objectives was uncertain, due to the lack of detail at this stage.

<p><i>before. The Plan will need to address if and how the mineral can be extracted as the main reserves are only found in an environmentally sensitive area.</i></p>	<ul style="list-style-type: none"> • For SA objectives 3 (promote sustainable patterns of movement and the use of more sustainable modes of transport) and 9 (promote more efficient use of land and resources) both options had a positive impact as the location of the only known resource of industrial dolomite in Nottinghamshire is in close proximity to an existing quarry and processing kilns. • The only clear difference between the 2 options was in relation to the SA objectives relating to economic sustainability. For SA objectives 1 (ensure adequate provision of the mineral to meet demand) and 13 (support wider economic development and promote local job opportunities), Option A was considered to have a very positive impact whereas Option B could have a negative or positive impact. <p>Option A: ‘Allocate sites’ was considered to be the most sustainable.</p>
<p>11. <i>How should the Plan identify future building stone reserves to meet local demand?</i></p>	<ul style="list-style-type: none"> • The impact of all 3 options against half of the SA objectives was uncertain due to the lack of detail at this stage. • For SA objectives 4 (protect the quality of the historic environment) and 5 (protect and enhance the quality and character of our townscape and landscape) all 3 options could have either a positive or a negative impact. • For SA objectives 3 (promote sustainable patterns of movement and the use of more sustainable modes of transport) and 7 (minimise any possible impacts on, and increase adaptability to, climate change) the impact of all 3 options was positive. • Differences in impacts between the options were limited to SA objectives 1 (ensure that adequate provision is made to meet local and national mineral demand), 9 (ensure that adequate provision is made to meet local and national mineral demand) and 13 (support wider economic development and promote local job opportunities). However even in the case of these objectives Options A and C had the same effects which were very positive in relation to objectives 1 and 13 whilst Option B could have a positive or negative impact. For

	<p>objective 9 Options A and C could have a positive or negative effect whilst the impact of Option B was uncertain.</p> <p>Options A: ‘Allocate sites / extensions’ and C: ‘Combination of site allocations and criteria-based policy’ were considered to be the most sustainable.</p>
<p>12. <i>Should a broadly positive stance be adopted to cover any future requirements for coal provision or reworking of spoil tips/lagoons?</i></p>	<ul style="list-style-type: none"> • The likely impact of both options was uncertain for all but four of the SA objectives: SA objectives 1 (ensure adequate provision of minerals to meet demand), 9 (promote more efficient use of land and resources), 12 (protect and improve water quality and promote efficient use of water) and 13 (support wider economic development and promote local job opportunities), due to the lack of detail at this stage. • For both SA objectives 1 and 13 the impact of Option A was positive and that of Option B was negative, with it being more likely that schemes would come forward and demand would be met under Option A. • Option A had a positive impact on SA objectives 9 and 12 whereas the effect to Option B on these objectives was uncertain. <p>Option A: ‘Use a criteria based policy approach’ was considered to be the most sustainable.</p>
<p>13. <i>What approach should the Plan set out towards hydrocarbons?</i></p>	<ul style="list-style-type: none"> • The likely impact of all 3 options was uncertain in terms of most of the SA objectives, due to the lack of detail at this stage. • There was no clear link between any of the options and SA objective 1 (ensure that adequate provision is made to meet local and national mineral demand). • All of the options had a negative impact on SA objectives 7 (minimise any possible impacts on, and increase adaptability to, climate change) and 10 (promote energy efficiency and maximise renewable energy opportunities from new or existing development). • There was uncertainty about the likely impact of both Options A and B on SA objective 13 (support wider economic development and promote local job

	<p>opportunities) but the effect of Option C on this objective was considered to be positive.</p> <ul style="list-style-type: none"> • On the basis of its positive impact on SA objective 13, Option C scored more favourably than Options A and B. <p>Option C: 'Allocate sites' was considered to be the most sustainable.</p>
<p>14. <i>How should development management (DM) policies be dealt with in the Plan?</i></p>	<ul style="list-style-type: none"> • There was a clear distinction between the 2 options, with Option A having a positive impact on most of the SA objectives whereas Option B had a negative impact on most of the SA objectives. <p>Option A: 'Develop specific policies for specific topic areas' was considered to be the most sustainable.</p>
<p>15. <i>What approach should be taken to safeguarding minerals?</i></p>	<ul style="list-style-type: none"> • There was no clear link between the options and most of the SA objectives. • Both of the options had a positive impact in terms of SA objectives 1 (ensure that adequate provision is made to meet local and national mineral demand), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities). • There was no difference between the 2 options in terms of the sustainability objectives. <p>Option A: 'Safeguard all mineral resources' and Option B: 'Safeguard economically important mineral resources' were considered to be equal in terms of their sustainability.</p>

4. Conclusions

- 4.1 Appraisal of the vision set out for the Plan found that it failed to impart a sustainable overall approach to minerals development as it did not adequately address the issues covered by a number of the Sustainability Appraisal (SA) objectives, including those on protecting landscape, high quality agricultural land, air quality and water quality; promoting energy efficiency and renewable energy; minimising impact and risk of flooding and climate change considerations. It was therefore recommended that the vision be revised to fully take into account these issues.
- 4.2 No incompatibility was found between the proposed key strategic objectives for the Minerals Local Plan (MLP) and the SA objectives. There were several instances where there was no relationship between the MLP's key strategic issues and some of the SA objectives but this was to be expected given the broad range of issues covered. Every key strategic issue was compatible with a number of SA objectives. However, it was found that there were significant gaps in the coverage of these key strategic issues in terms of addressing all of the SA objectives. It was therefore recommended that revised key strategic issues are formulated, or Plan objectives are developed, which address the issues outlined in the SA objectives on historic environment, landscape, flooding, climate change, agricultural land and soil, energy efficiency and renewable energy, air quality and water quality.
- 4.3 In terms of Issue 1 (forecasting future demand for aggregates) it was found that the most sustainable option would be to use the Local Aggregates Assessment (LAA) average 10 year sales figure for all types of aggregates.
- 4.4 For both Issue 2 (the approach to identifying adequate minerals provision) and Issue 4 (location of Sherwood Sandstone quarries) the most sustainable option would be to prioritise extensions to existing permitted quarries.
- 4.5 For half of the issues which had one of the options as 'Allocate sites' or 'Allocate sites/extensions', it was this option which was found to be the most sustainable rather than the option of using a criteria based policy approach. These were Issues 8 (identifying adequate gypsum reserves), 10 (industrial dolomite extraction) and 13 (approach towards hydrocarbons).
- 4.6 In the case of Issues 7 (identification of brick clay reserves) and 11 (identification of building stone reserves), 'Allocate sites/extensions' was one of two equally most favourable options, along with the option of 'Combination of allocations and criteria based policy'. For Issue 5 the most sustainable option would be 'Combination of site allocations and criteria based policy (subject to need)'.

- 4.7 A criteria based policy approach would be considered the most sustainable option in respect of Issue 12 (stance to be adopted for coal provision or reworking of spoil tips/ lagoons) where the only alternative option would be to rely on development management policies.
- 4.8 In respect of Issue 9 (silica sand reserves) two out of the three options would be equally the most sustainable. These were a 'Criteria based policy approach subject to need for additional provision and 'Identify broad locations'. The third option which was considered less sustainable was 'Rely on development management policies'.
- 4.9 For Issue 3 (approach to the location of sand and gravel quarries) there were 5 options of which 2 were equally the most sustainable, namely 'Geographical spread across the County' and 'Prioritise locations with potential for transporting sand and gravel by river barge'.
- 4.10 The three remaining issues each had only 2 options. On Issue 6 (alternative aggregates) the options were either to have a policy promoting the use of alternative aggregates or not to have a policy at all and the former was found to be the most sustainable option. Similarly, for Issue 14 (development management policies) the most sustainable option would be to develop specific policies for specific topic areas rather than to develop criteria based policies for broad groupings of topic areas. On Issue 15 there was no difference between the two options considered, with safeguarding all mineral resources and safeguarding economically important mineral resources being equally favourable in terms of the sustainability objectives.
- 4.11 There was a large degree of uncertainty involved in terms of the effects of many of the options on a number of SA objectives, however this was considered to be inevitable at this stage given the generality of some of the options and lack of detail at this strategic level.

5. Next steps

- 5.1 The findings of this SA will inform the preparation of the next stage of the Minerals Local Plan (MLP). This will be the Draft Plan which will involve the refinement of the options into policies and site allocations. SA is an iterative process which is closely tied in to the development of the MLP. Further SA will therefore be undertaken as the MLP progresses in order to aid the decision making process in the formulation of policies and allocation of sites.

Appendix A: Issues and Options Appraisal Matrices

ISSUE: 1. How should we forecast future demand for aggregates over the Plan period?

Sustainability Appraisal Objectives	Option A: Use the Local Aggregates Assessment (LAA) average 10 year sales figure for all types of aggregates		Option B: Use an alternative realistic and deliverable methodology for all types of aggregates which produces a lower figure than Option A		Option C: Use an alternative realistic and deliverable methodology for all types of aggregates which produces a higher figure than Option A		Option D: Use different methodologies for different aggregates	
1. Ensure that adequate provision is made to meet local and national mineral demand.	+	This option would plan to meet demand, although there would be a possibility of undersupply if the economy grew rapidly.	- -	This option could result in undersupply.	++	This option could result in oversupply.	?	If different methodologies would more accurately forecast the demand for different aggregates then this option would have a very positive impact, however it is unclear whether such methodologies exist.
2. Protect and enhance biodiversity at all levels and safeguard features of geological	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.

interest.								
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	?	Impact would be dependent on the location of sites in relation to markets for the minerals and opportunities for linking to e.g. rail/water transport.	?	Impact would be dependent on the location of sites in relation to markets for the minerals and opportunities for linking to e.g. rail/water transport.	?	Impact would be dependent on the location of sites in relation to markets for the minerals and opportunities for linking to e.g. rail/water transport.	?	Impact would be dependent on the location of sites in relation to markets for the minerals and opportunities for linking to e.g. rail/water transport.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.
6. Minimise impact and risk of	?	Impact would be dependent on the location of sites and	?	Impact would be dependent on the location of sites and	?	Impact would be dependent on the location of sites and	?	Impact would be dependent on the location of sites and

flooding.		nature of operations.		nature of operations.		nature of operations.		nature of operations.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	?	Effect would be dependent on site characteristics and nature of operations.	?	Effect would be dependent on site characteristics and nature of operations.	?	Effect would be dependent on site characteristics and nature of operations.	?	Effect would be dependent on site characteristics and nature of operations.
8. Protect high quality agricultural land and soil.	-	Agricultural land is often the existing use prior to sand and gravel extraction and it is usually restored to wetland rather than agricultural land so there is much potential for the loss of high quality agricultural land.	+	Lower provision of sand and gravel would be likely to involve less agricultural land being lost to extraction.	- -	Higher provision of sand and gravel could result in greater loss of agricultural land.	-	Agricultural land is often the existing use prior to sand and gravel extraction and it is usually restored to wetland rather than agricultural land so there is much potential for the loss of high quality agricultural land.
9. Promote more efficient use of land and resources.	+	Given that minerals can only be worked where they are found, matching supply and demand results in the most efficient use of land and resources possible.	-	Less land would be used for lower provision of sand and gravel but the need to provide for further demand which had not been planned for could result in inefficient use of land and resources.	-	Over provision and potentially more semi-worked sites would result in inefficient use of land and resources.	+	Given that minerals can only be worked where they are found, matching supply and demand results in the most efficient use of land and resources possible.
10. Promote	?	Effect would be	?	Effect would be	?	Effect would be	?	Effect would be

energy efficiency and maximise renewable energy opportunities from new or existing development.		dependent on the nature of operations.		dependent on the nature of operations.		dependent on the nature of operations.		dependent on the nature of operations.
11. Protect and improve local air quality.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on site location and the nature of operations.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of operation.
13. Support wider economic development and promote local job opportunities.	+	Level of production would be likely to meet demand and therefore be beneficial to wider economic development and provide local job opportunities.	- -	The possibility of undersupply could constrain wider economic development and local job opportunities would be reduced.	+	Overprovision would ensure wider economic development and provide local job opportunities.	?	If this option resulted in the most accurate matching of supply with demand then it would have a positive impact, however it is unclear whether such methodologies exist.
14. Protect and improve	?	Impact would be dependent on the	?	Impact would be dependent on the	?	Impact would be dependent on the	?	Impact would be dependent on the

human health and quality of life.		nature of operations and details of restoration.		nature of operations and details of restoration.		nature of operations and details of restoration.		nature of operations and details of restoration.
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Summary

- The likely impact of all 4 options was uncertain in terms of many of the SA objectives which covered specific environmental issues, for example, biodiversity and landscape. This was due to the lack of detail at this stage.
- However there were significant differences between the options in relation to SA objectives 1 (ensure adequate provision of minerals to meet demand), 8 (protect high quality agricultural land and soil), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities).
- For SA objective 1 it was considered that the likely impact of Option A would be positive, B would be very negative, C would be very positive and there was insufficient information for D on which to determine impact.
- For SA objective 8 Option B was positive, Options A and D were negative, and C was very negative.
- For SA objective 9 both options A and D were positive, whilst B and C were negative.
- For SA objective 13 both options A and C were positive, B was very negative and there was insufficient information for D on which to determine impact.
- Options B and D therefore scored less favourably than A and C. Although C was very positive for SA objective 1 it was noted that this option could actually result in oversupply of aggregates, which was reflected in its very negative score on the potential loss of high quality agricultural land and negative impact on promoting more efficient use of land and resources. Option A is therefore considered to be more favourable in sustainability terms than Option C.
- Option A is the most sustainable.

ISSUE: 2. What approach should be adopted when identifying adequate minerals provision in the Plan?

Sustainability Appraisal Objectives	Option A: Prioritise extensions to existing permitted quarries		Option B: Prioritise new greenfield sites		Option C: Allocate sites based on their individual merits		Option D: Use criteria based policy approach for all mineral types		Option E: Consider on a mineral by mineral basis	
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	The Plan would identify sufficient sites to meet demand.	++	The Plan would identify sufficient sites to meet demand.	++	The Plan would identify sufficient sites to meet demand.	I	There would be a risk that not enough sites would meet the criteria, but it would potentially allow for flexibility to take local circumstances into account in assessing sites coming forward during the Plan period.	+	The Plan would provide some certainty that provision could be made.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the location of sites in	?	Impact would be dependent on the location of	?	Impact would be dependent on the location of sites in	?	Impact would be dependent on the details of the	?	Impact would be dependent on the location of

		relation to habitats/species/geological features.		sites in relation to habitats/species/geological features.		relation to habitats/species/geological features.		criteria in the policy.		sites in relation to habitats/species/geological features.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	I	Effect would be dependent on the location of sites in relation to markets for the types of minerals and to opportunities for linking to, e.g. rail/water transport. However extensions are unlikely to require the development of new transport infrastructure and the sites are likely to be well related to the main highway network.	I	Effect would be dependent on the location of sites in relation to markets for the types of minerals and to opportunities for linking to, e.g. rail/water transport. However new greenfield sites would be likely to require new transport infrastructure to be developed, but there could be potential for sites closer	I	Effect would be dependent on the location of sites in relation to markets for the types of minerals and to opportunities for linking to, e.g. rail/water transport, and on the type of site – new or extension.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on the location of sites in relation to markets for the types of minerals and to opportunities for linking to, e.g. rail/water transport.

				to markets which would reduce haulage distances.						
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to heritage assets.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites and nature of operations.
7. Minimise any possible impacts on,	?	Effect would be dependent	?	Effect would be	?	Effect would be dependent	?	Impact would be	?	Effect would be

and increase adaptability to, climate change.		on site characteristics and nature of operations.		dependent on site characteristics and nature of operations.		on site characteristics and nature of operations.		dependent on the details of the criteria in the policy.		dependent on site characteristics and nature of operations.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.
9. Promote more efficient use of land and resources.	+	Minerals can only be worked where they are found, but extensions can make the most efficient use of land and resources possible by utilising the existing site's	-	Minerals can only be worked where they are found, but new greenfield sites would require the creation of new infrastructure .	I	Minerals can only be worked where they are found. Impact would be dependent on type of site – new or extension.	?	Impact would be dependent on the details of the criteria in the policy.	I	Minerals can only be worked where they are found. Impact would be dependent on type of site – new or extension.

		infrastructure.								
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Effect would be dependent on the nature of operations.	?	Effect would be dependent on the nature of operations.	?	Effect would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on the nature of operations.
11. Protect and improve local air quality.	0	Impact would be dependent on site location and the nature of operations. However transport emissions from haulage of the mineral and staff travel to the site would be likely to continue as existing.	1	Impact would be dependent on site location and the nature of operations, but haulage of the mineral and staff travel in relation to new sites would introduce additional transport emissions to those areas. However there could be potential for sites closer to markets	?	Impact would be dependent on site location and the nature of operations and on type of site – new or extension.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on site location and the nature of operations.

				which would reduce haulage distances.						
12. Protect and improve water quality and promote efficient use of water.	0	Impact would be dependent on the details of operation, however the existing situation in the area and any requirement for mitigation measures would be known.	-	Impact would be dependent on the details of operation, however new sites could create potential for new sources of contamination.	?	Impact would be dependent on the details of operation and on type of site – new or extension.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of operation.
13. Support wider economic development and promote local job opportunities.	+	The Plan would contribute to the minerals provision required for economic development at a national level and by allocating sites there would be certainty for developers. Existing employment	+	The Plan would contribute to the minerals provision required for economic development at a national level and by allocating sites there would be certainty for developers, possibly creating	+	The Plan would contribute to the minerals provision required for economic development at a national level and by allocating sites there would be certainty for developers, either maintaining	?	Impact would be dependent on the details of the criteria in the policy.	?	It is not clear whether sites would be allocated for all mineral types.

		would be maintained.		potential for a limited number of local job opportunities.		existing employment in the case of extensions or possibly creating potential for a limited number of local job opportunities in the case of new sites.				
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the nature of operations and on details of restoration.	?	Impact would be dependent on the nature of operations and on details of restoration.	?	Impact would be dependent on the nature of operations and on details of restoration.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the nature of operations and on details of restoration.

Summary

- The likely impact of all of the options was uncertain on SA objectives 2 (biodiversity/geodiversity), 4 (historic environment), 5 (landscape/townscape), 6 (flooding), 7 (climate change), 8 (high quality agricultural land/soil), 10 (efficiency/renewable energy) and 14 (human health/quality of life) due to the lack of detail in the options which is inevitable at this stage.
- On SA objective 1 (adequate mineral provision) Options A, B and C had a very positive impact, Option E had a positive impact and Option D could have a positive or negative impact depending on how it would be implemented. Similarly, Options A, B and C had a positive impact on SA objective 13 whilst the impact of Options D and E was uncertain. So in terms of the economic aspects of sustainability Options A, B and C scored equally favourably.

- On SA objective 3 (sustainable transport) the effect of Options A, B and C could be positive or negative depending on how they would be implemented, whilst the impact of Options D and E was uncertain.
- Option A had a positive impact on SA objective 9 (efficient use of land/resources) as it would involve utilising existing infrastructure, whereas Option B, requiring the creation of new infrastructure, had a negative impact. Options C and E could have a positive or negative impact depending on how they would be implemented, whilst the impact of Option d was uncertain.
- Each of the options had similar impacts on SA objectives 11 (air quality) and 12 (water quality/efficient use of water) with Option A having no significant effect and the effect of Options C, D and E being uncertain on both objectives. Option B could have a positive or negative impact on objective 11 depending on how it would be implemented and a negative impact on objective 12 due to the potential to create new sources of contamination.
- Overall, therefore, Option A scored most favourably.

ISSUE: 3. What should the Plan’s approach be to the location of future sand and gravel quarries?

Sustainability Appraisal Objectives	Option A: Geographical spread across the County		Option B: Prioritise specific areas		Option C: Prioritise locations with potential for transporting sand and gravel by river barge		Option D: Allocate sites based on their individual merits		Option E: Use criteria based policy approach	
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	The Plan would identify sufficient sites to meet demand.	++	The Plan would identify sufficient sites to meet demand.	++	The Plan would identify sufficient sites to meet demand.	++	The Plan would identify sufficient sites to meet demand.	I	There would be a risk that not enough sites would meet the criteria, but would potentially allow for flexibility to take local circumstances into account in assessing sites coming forward during the Plan period.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the details of the criteria in the policy.
3. Promote sustainable patterns of movement and	+	Geographical spread is likely to result in sites being closer to	?	Effect would be dependent on the location of sites in	+	The use of river barges for transporting the mineral would be a	?	Effect would be dependent on the location of sites in relation to	?	Impact would be dependent on the details of the criteria in the

the use of more sustainable modes of transport.		markets thus reducing road haulage distances.		relation to markets for the types of minerals and to opportunities for linking to, e.g. rail/water transport.		more sustainable mode of transport than road haulage.		markets for the types of minerals and to opportunities for linking to, e.g. rail/water transport.		policy.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the details of the criteria in the policy.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the details of the criteria in the policy.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
7. Minimise any possible impacts on, and increase	+	Effect would be dependent on site	?	Effect would be dependent on site	+	Effect would be dependent on site characteristics and	?	Effect would be dependent on site characteristics	?	Impact would be dependent on the details of the

adaptability to, climate change.		characteristics and nature of operations. However geographical spread is likely to result in sites being closer to markets thus reducing road haulage distances and consequent emissions.		characteristics and nature of operations.		nature of operations. However prioritising sites with transport of the mineral by river barge would minimise emissions from road haulage.		and nature of operations.		criteria in the policy.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the details of the criteria in the policy.
9. Promote more efficient use of land and resources.	0	Minerals can only be worked where they are found.	0	Minerals can only be worked where they are found.	0	Minerals can only be worked where they are found.	0	Minerals can only be worked where they are found.	0	Minerals can only be worked where they are found.
10. Promote energy efficiency and maximise renewable energy	?	Effect would be dependent on the nature of operations.	?	Effect would be dependent on the nature of operations.	?	Effect would be dependent on the nature of operations.	?	Effect would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the

opportunities from new or existing development.										policy.
11. Protect and improve local air quality.	+	Impact would be dependent on site location and the nature of operations. However geographical spread is likely to result in sites being closer to markets thus reducing road haulage distances and consequent emissions.	?	Impact would be dependent on site location and the nature of operations.	+	Impact would be dependent on site location and the nature of operations. However prioritising sites with transport of the mineral by river barge would minimise emissions from road haulage.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of the criteria in the policy.
13. Support wider economic development and promote local job opportunities.	+	The Plan would contribute to the minerals provision required for economic development at a national level and there would	+	The Plan would contribute to the minerals provision required for economic development at a national	+	The Plan would contribute to the minerals provision required for economic development at a national level and there would be potential to create	+	The Plan would contribute to the minerals provision required for economic development at a national level and there would be potential to create	?	Impact would be dependent on the details of the criteria in the policy.

		be potential to create a limited number of local job opportunities.		level and there would be potential to create a limited number of local job opportunities.		a limited number of local job opportunities.		a limited number of local job opportunities.		
14. Protect and improve human health and quality of life.	+	Geographical spread is likely to result in sites being closer to markets thus reducing road haulage distances and minimising transport emissions and traffic noise.	?	Impact would be dependent on the nature of operations and on details of restoration.	+	Prioritising sites with transport of the mineral by river barge would minimise road traffic noise and emissions from road haulage.	?	Impact would be dependent on the nature of operations and on details of restoration.	?	Impact would be dependent on the location of sites in relation to habitats/species/g ecological features.

Summary

- There was uncertainty as to the likely impact of all of the options on half of the SA objectives (2, 4, 5, 6, 8, 10 and 12) due to the lack of detail at this stage.
- The impacts of Options A, B, C and D on SA objective 1 were very positive as they should all ensure adequate mineral provision is made and similarly, on SA objective 13, in terms of wider economic development and local job opportunities, they were all positive. Option E's impact on SA objective 1 could be positive or negative depending on how it is implemented and on SA objective 13 is uncertain.
- Options A and C had a positive impact on SA objectives 3 (sustainable patterns of movement/modes of transport), 7 (climate change), 11 (air quality) and 14 (human health/quality of life) whilst the impact of the other options on these objectives was uncertain.
- Options A and C scored equally favourably and were more sustainable than the other options.

ISSUE: 4. What should the Plan’s approach be to the location of future Sherwood Sandstone quarries?

Sustainability Appraisal Objectives	Option A: Prioritise extensions to existing permitted quarries		Option B: Prioritise new greenfield sites		Option C: Allocate sites based on their individual merits		Option D: Use criteria based policy approach	
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	The Plan would identify sufficient sites to meet demand.	++	The Plan would identify sufficient sites to meet demand.	++	The Plan would identify sufficient sites to meet demand.	I	There would be a risk that not enough sites would meet the criteria, but would potentially allow for flexibility to take local circumstances into account in assessing sites coming forward during the Plan period.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the details of the criteria in the policy.
3. Promote sustainable patterns of movement and the use of	I	Effect would be dependent on the location of sites in relation to markets for the types of minerals	I	Effect would be dependent on the location of sites in relation to markets for the types of minerals	I	Effect would be dependent on the location of sites in relation to markets for the types of minerals and to opportunities for linking to,	?	Impact would be dependent on the details of the criteria in the policy.

more sustainable modes of transport.		and to opportunities for linking to, e.g. rail/water transport. However extensions are unlikely to require the development of new transport infrastructure and the sites are likely to be well related to the main highway network.		and to opportunities for linking to, e.g. rail/water transport. However new greenfield sites would be likely to require new transport infrastructure to be developed, but there could be potential for sites closer to markets which would reduce haulage distances.		e.g. rail/water transport, and on the type of site – new or extension.		
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the details of the criteria in the policy.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the details of the criteria in the policy.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
7. Minimise	?	Effect would be	?	Effect would be	?	Effect would be dependent	?	Impact would be

any possible impacts on, and increase adaptability to, climate change.		dependent on site characteristics and nature of operations.		dependent on site characteristics and nature of operations.		on site characteristics and nature of operations.		dependent on the details of the criteria in the policy.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the details of the criteria in the policy.
9. Promote more efficient use of land and resources.	+	Minerals can only be worked where they are found, but extensions can make the most efficient use of land and resources possible by utilising the existing site's infrastructure.	-	Minerals can only be worked where they are found, but new greenfield sites would require the creation of new infrastructure.	I	Minerals can only be worked where they are found. Impact would be dependent on type of site – new or extension.	?	Impact would be dependent on the details of the criteria in the policy.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Effect would be dependent on the nature of operations.	?	Effect would be dependent on the nature of operations.	?	Effect would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
11. Protect and improve local air	0	Impact would be dependent on site location and the nature	I	Impact would be dependent on site location and the nature	?	Impact would be dependent on site location and the nature of	?	Impact would be dependent on the details of the

quality.		of operations. However transport emissions from haulage of the mineral and staff travel to the site would be likely to continue as existing.		of operations, but haulage of the mineral and staff travel in relation to new sites would introduce additional transport emissions to those areas. However there could be potential for sites closer to markets which would reduce haulage distances.		operations and on type of site – new or extension.		criteria in the policy.
12. Protect and improve water quality and promote efficient use of water.	0	Impact would be dependent on the details of operation, however the existing situation in the area and any requirement for mitigation measures would be known.	-	Impact would be dependent on the details of operation, however new sites could create potential for new sources of contamination.	?	Impact would be dependent on the details of operation and on type of site – new or extension.	?	Impact would be dependent on the details of the criteria in the policy.
13. Support wider economic development and promote local job opportunities.	+	The Plan would contribute to the minerals provision required for economic development at a national level and by allocating sites there would be certainty for developers. Existing employment would be maintained.	+	The Plan would contribute to the minerals provision required for economic development at a national level and by allocating sites there would be certainty for developers, possibly creating potential for a limited number of local job opportunities.	+	The Plan would contribute to the minerals provision required for economic development at a national level and by allocating sites there would be certainty for developers, either maintaining existing employment in the case of extensions or possibly creating potential for a limited number of local job opportunities in the case of new sites.	?	Impact would be dependent on the details of the criteria in the policy.

14. Protect and improve human health and quality of life.	?	Impact would be dependent on the nature of operations and on details of restoration.	?	Impact would be dependent on the nature of operations and on details of restoration.	?	Impact would be dependent on the nature of operations and on details of restoration.	?	Impact would be dependent on the details of the criteria in the policy.
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Summary

- The likely impact of all of the options was uncertain on SA objectives 2 (biodiversity/geodiversity), 4 (historic environment), 5 (landscape/townscape), 6 (flooding), 7 (climate change), 8 (high quality agricultural land/soil), 10 (efficiency/renewable energy) and 14 (human health/quality of life) due to the lack of detail in the options which is inevitable at this stage.
- On SA objective 1 (adequate mineral provision) Options A, B and C had a very positive impact, Option E had a positive impact and Option D could have a positive or negative impact depending on how it would be implemented. Similarly, Options A, B and C had a positive impact on SA objective 13 whilst the impact of Options D and E was uncertain. So in terms of the economic aspects of sustainability Options A, B and C scored equally favourably.
- On SA objective 3 (sustainable transport) the effect of Options A, B and C could be positive or negative depending on how they would be implemented, whilst the impact of Options D and E was uncertain.
- Option A had a positive impact on SA objective 9 (efficient use of land/resources) as it would involve utilising existing infrastructure, whereas Option B, requiring the creation of new infrastructure, had a negative impact. Options C and E could have a positive or negative impact depending on how they would be implemented, whilst the impact of Option d was uncertain.
- Each of the options had similar impacts on SA objectives 11 (air quality) and 12 (water quality/efficient use of water) with Option A having no significant effect and the effect of Options C, D and E being uncertain on both objectives. Option B could have a positive or negative impact on objective 11 depending on how it would be implemented and a negative impact on objective 12 due to the potential to create new sources of contamination.
- Overall, therefore, Option A scored most favourably.

ISSUE: 5. Whilst there is currently no evidence to suggest that there will be a shortage of crushed rock reserves over the Plan period, if additional reserves will be required to meet demand this needs to be addressed in the Plan.

Sustainability Appraisal Objectives	Option A: Allocate site(s)		Option B: Criteria based policy subject to need for additional provision		Option C: Combination of site allocations and criteria based policy (subject to need)	
1. Ensure that adequate provision is made to meet local and national mineral demand.	+	The allocation of sites would ensure that demand could be met, provided that they are deliverable.	+	Allowing for additional provision to meet demand would have a positive impact. It is unknown whether sites would meet the criteria but given the situation for aggregate limestone it is very unlikely that the criteria would result in a shortfall.	++	The combination of allocations and allowing for additional provision if there is a need would ensure that demand could be met.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent the location of sites in relation to habitats/species/geological features and on the details of the criteria in the policy.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	?	Effect would be dependent on the location of sites in relation to markets for the mineral and to opportunities for linking to, e.g. rail/water transport.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to markets for the mineral and to opportunities for linking to, e.g. rail/water transport and on the details of the criteria in the policy.
4. Protect the quality of the	?	Impact would be	?	Impact would be	?	Impact would be

historic environment, heritage assets and their settings above and below ground.		dependent on the location of sites in relation to heritage assets.		dependent on the details of the criteria in the policy.		dependent on the location of sites in relation to heritage assets and on the details of the criteria in the policy.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character and on the details of the criteria in the policy.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites and nature of operations and on the details of the criteria in the policy.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	?	Effect would be dependent on site characteristics and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on site characteristics and nature of operations and on the details of the criteria in the policy.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil and on the details of the criteria in the policy.
9. Promote more efficient use of land and resources.	I	More efficient use of land would result from extensions being permitted	?	Impact would be dependent on the details of the criteria in	I	More efficient use of land would result from extensions being permitted

		but if new greenfield sites were to be allocated there could be a negative impact.		the policy.		but if new greenfield sites were to be allocated there could be a negative impact. Impact would also be dependent on the details of the criteria in the policy.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0	No clear link.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policy.
11. Protect and improve local air quality.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on site location and the nature of operations and on the details of the criteria in the policy.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of operation and on the details of the criteria in the policy.
13. Support wider economic development and promote local job opportunities.	+	The Plan would contribute to the aggregate limestone provision required for economic development at a national level and by allocating sites there would be certainty for developers, creating potential for local job opportunities.	?	Impact would be dependent on the details of the criteria in the policy.	+	The Plan would contribute to the aggregate limestone provision required for economic development at a national level and by allocating sites there would be certainty for developers, creating potential for local job opportunities.
14. Protect and improve	?	Impact would be	?	Impact would be	?	Impact would be

human health and quality of life.		dependent on the nature of operations.		dependent on the details of the criteria in the policy.		dependent on the nature of operations and on the details of the criteria in the policy.
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Summary

- The likely impact of all 3 options was uncertain in terms of many of the SA objectives, particularly those covering specific environmental issues, such as biodiversity and landscape, due to the lack of detail at this stage.
- There was no clear link between Option A and SA objective 10 (promote energy efficiency and maximise renewable energy opportunities) whilst for the other options the impact was uncertain as it would be dependent on the details of criteria in the policy.
- There were differences between the options in respect of SA objectives 1 (ensure adequate provision of minerals to meet demand), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities).
- For SA objective 1 both Options A and B were considered to have a positive impact as allocation of sites/extensions would ensure the potential for demand to be met, whilst, in the case of B, allowing for additional provision if needed would ensure demand could be met. Consequently, Option C, being a combination of A and B scored very positively.
- For SA objective 9 it was considered that both Options A and C could have either a positive or a negative impact as extensions would be efficient in terms of use of land but new sites would not. The impact was uncertain for Option B as it would be dependent on the details of the criteria in the policy.
- For SA objective 13 the impact of Option B was again uncertain for the same reason, but it was positive for both Options A and C.
- Overall, Options A and C scored more favourably than Option B and Option C scored marginally more favourably than Option A, having a very positive impact, rather than just a positive impact, on SA objective 13.

ISSUE: 6. How should the Plan deal with alternative aggregates? There is limited opportunity for further growth, although new technology could bring about new methods/demand in the future.

Sustainability Appraisal Objectives	Option A: Include a policy to promote the use of alternative aggregates		Option B: Do not include a policy on alternative aggregates.	
1. Ensure that adequate provision is made to meet local and national mineral demand.	+	Demand is unknown and alternative aggregates cannot be identified as a resource in the same way as primary aggregates, however promotion of their use should have a positive impact, albeit to an unknown extent.	?	The use of alternative aggregates will be determined by the market.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	I	Potentially reduced need for primary aggregates could result in fewer established habitats and geological features being adversely affected by mineral extraction but possible disturbance of colonised sources of alternative aggregates e.g. great crested newts in PFA sites could have a negative impact.	I	Impact would be dependent on the level of use of alternative aggregates as determined by market forces and consequent effects as referred to under Option A.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	?	Impact would be dependent on the locations of sources of alternative aggregates relative to the locations where they were to be used.	?	Impact would be dependent on the locations of sources of alternative aggregates relative to the locations where they were to be used.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	+	Potentially reduced need for primary aggregates could result in less damage to the historic environment through mineral extraction, although it is unknown	?	Impact would be dependent on the level of use of alternative aggregates as determined by market forces and consequent effects as referred to under Option

		to what degree.		A.
5. Protect and enhance the quality and character of our townscape and landscape.	+	Potentially reduced need for primary aggregates could result in less damage to the landscape through mineral extraction, although it is unknown to what degree.	?	Impact would be dependent on the level of use of alternative aggregates as determined by market forces and consequent effects as referred to under Option A.
6. Minimise impact and risk of flooding.	0	No clear link.	0	No clear link.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	+	Less input of energy and therefore fewer emissions of greenhouse gases should be required to prepare alternative aggregates for reuse than for extraction and preparation of primary aggregates.	?	Impact would be dependent on the level of use of alternative aggregates as determined by market forces and consequent effects as referred to under Option A.
8. Protect high quality agricultural land and soil.	?	There may be some potential for less agricultural land to be affected but it is uncertain what the impact would be.	?	There may be some potential for less agricultural land to be affected but it is uncertain what the impact would be.
9. Promote more efficient use of land and resources.	+	More efficient use of resources and results from reuse of materials which would otherwise be disposed of in landfill sites and demolition of vacant buildings results in brownfield land being available for development.	?	Impact would be dependent on the level of use of alternative aggregates as determined by market forces and consequent effects as referred to under Option A.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	+	It is likely to be more energy efficient to reuse existing materials than to extract primary aggregates.	?	Impact would be dependent on the level of use of alternative aggregates as determined by market forces and consequent effects as referred to under Option A.
11. Protect and improve local air quality.	0	No clear link.	0	No clear link.
12. Protect and improve water quality and promote efficient use of water.	0	No clear link.	0	No clear link.

13. Support wider economic development and promote local job opportunities.	+	There is the potential for creation local job opportunities in the process of providing alternative aggregates.	?	Impact would be dependent on the level of use of alternative aggregates as determined by market forces and consequent effects as referred to under Option A.
14. Protect and improve human health and quality of life.	?	There is insufficient information on which to determine impact.	?	There is insufficient information on which to determine impact.

Summary

- There was no clear link between either Option A or Option B and SA objectives 6 (minimise impact and risk of flooding), 11 (protect local air quality) and 12 (protect water quality). The impact of both options was uncertain on SA objectives 3 (promote sustainable patterns of movement/ use of sustainable transport), 8 (protect high quality agricultural land and soil) and 14 (protect human health and quality of life).
- Both options were considered to have the potential for either a positive or a negative impact on SA objective 2 (protect biodiversity) as if the need for primary aggregates were to be reduced potentially fewer natural habitats would be adversely affected but, conversely, disturbing colonised sources of secondary aggregates could have a negative impact.
- Both options were positive in their impact on SA objective 1 (ensure adequate provision of minerals to meet demand).
- For all the remaining SA objectives, which related to environmental and economic issues, Option A was positive whereas for Option B the impact was uncertain as it would be dependent on the level of use of alternative aggregates determined by market forces.
- Option A therefore scored more favourably than Option B.

ISSUE: 7. How should brick clay reserves and brick works be identified to ensure adequate supply over the Plan period?

Sustainability Appraisal Objectives	Option A: Allocate sites / extensions		Option B: Criteria based policy		Option C: Combination of allocations and criteria based policy	
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	The allocation of sites/extensions would ensure that demand could be met, provided that they are deliverable.	I	There would be a risk that not enough sites would meet the criteria, but it would potentially allow for flexibility to take local circumstances into account in assessing sites coming forward during the Plan period.	++	The combination of allocations and allowing for additional provision if there is a need would ensure that demand could be met.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features and on the details of the criteria in the policy.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	I	In the case of new sites the effect would be dependent on the location of sites in relation to the brickworks so potentially could be negative if longer haulage routes are required. However in the case of extensions the impact could be positive as the existing internal haul roads and conveyors	?	Impact would be dependent on the details of the criteria in the policy.	I	In the case of new sites the effect would be dependent on the location of sites in relation to the brickworks so potentially could be negative if longer haulage routes are required. However in the case of extensions the impact could be positive as the existing internal haul roads and conveyors

		to the brickworks from the existing sites could be used.				to the brickworks from the existing sites could be used. Details of the criteria in the policy would also determine impact.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to heritage assets and on the details of the criteria in the policy.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character and on the details of the criteria in the policy.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites and nature of operations and on the details of the criteria in the policy.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	?	Effect would be dependent on site characteristics and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on site characteristics and nature of operations and on the details of the criteria in the policy.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of

		operations in respect of soil.				operations in respect of soil and on the details of the criteria in the policy.
9. Promote more efficient use of land and resources.	I	More efficient use of land would result from extensions being permitted (as these could utilise the existing site's infrastructure of haul roads, screening/noise bunds, areas for plant and machinery etc) but if new greenfield sites are allocated there could be a negative impact.	?	Impact would be dependent on the details of the criteria in the policy.	I	More efficient use of land would result from extensions being permitted (as these could utilise the existing site's infrastructure of haul roads, screening/noise bunds, areas for plant and machinery etc) but if new greenfield sites are allocated there could be a negative impact.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Effect would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on the nature of operations and on the details of the criteria in the policy.
11. Protect and improve local air quality.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on site location and the nature of operations and on the details of the criteria in the policy.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of operation and on the details of the criteria in the policy.
13. Support wider economic development and promote local job opportunities.	++	The Plan would contribute to the minerals provision required for economic	?	Impact would be dependent on the details of the criteria in	++	The Plan would contribute to the minerals provision required for economic

		development at a national level and by allocating sites there would be certainty for developers, creating potential for local job opportunities.		the policy.		development at a national level and by allocating sites there would be certainty for developers, creating potential for local job opportunities.
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the nature of operations and on the details of the criteria in the policy.

Summary

- The likely impact of all 3 options was uncertain in terms of many of the SA objectives, particularly those covering specific environmental issues, such as biodiversity and the historic environment, due to the lack of detail at this stage.
- However for SA objective 3 (promote sustainable patterns of movement and modes of transport) it was considered that Options A and C could have a positive or negative impact as extensions would be nearer to the brickworks and could use existing haulage roads/conveyor belts, whereas new sites could require longer haulage routes to the brickworks.
- The potential for a positive or negative impact was also the case for both Options A and C in relation to SA objective 9 (promote more efficient use of land and resources) due to the more efficient use of land that would result from extensions being permitted rather than the potential negative impact of greenfield sites.
- For SA objectives 1 (ensure adequate minerals provision to meet demand) and 13 (support wider economic development and promote local job opportunities) Options A and C had a very positive impact. Option B's impact on SA objective 1 could be positive or negative, as there would be a risk that demand would not be met but it would allow for flexibility, and on 13 was uncertain as the details of the criteria in the policy are unknown at this stage.
- Options A and C were equally the most favourable in this appraisal.

ISSUE: 8. How should adequate gypsum reserves be identified to meet demand over the Plan period?

Sustainability Appraisal Objectives	Option A: Allocate sites/extensions		Option B: Use criteria based policy approach	
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	The allocation of sites/extensions would ensure that demand could be met, provided that they are deliverable.	I	There would be a risk that not enough sites would meet the criteria, but it would potentially allow for flexibility to take local circumstances into account in assessing sites coming forward during the Plan period.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the details of the criteria in the policy.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	I	Effect would be dependent on the location of sites in relation to markets for the mineral and to opportunities for linking to, e.g. rail/water transport. However extensions are unlikely to require the development of new transport infrastructure and the sites are likely to be well related to the main highway network, whereas new greenfield sites would be likely to require new transport infrastructure to be developed, but there could be potential for sites closer to markets which would reduce haulage distances.	?	Impact would be dependent on the details of the criteria in the policy.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the location of sites in relation to heritage assets.	?	Impact would be dependent on the details of the criteria in the policy.

5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	Impact would be dependent on the details of the criteria in the policy.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	?	Effect would be dependent on site characteristics and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the details of the criteria in the policy.
9. Promote more efficient use of land and resources.	I	More efficient use of land would result from extensions being permitted (as these could utilise the existing site's infrastructure of haul roads, screening/noise bunds, areas for plant and machinery etc) but if new greenfield sites are allocated there could be a negative impact.	?	Impact would be dependent on the details of the criteria in the policy.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Effect would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
11. Protect and improve local air quality.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of the criteria in the policy.
13. Support wider economic	++	The Plan would contribute to the	?	Impact would be dependent on

development and promote local job opportunities.		minerals provision required for economic development at a national level and by allocating sites there would be certainty for developers, creating potential for local job opportunities.		the details of the criteria in the policy.
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.

Summary

- The likely impact of both options was uncertain in terms of many of the SA objectives, particularly those covering specific environmental issues, such as biodiversity and the historic environment, due to the lack of detail at this stage.
- However for SA objective 3 (promote sustainable patterns of movement and modes of transport) and 9 (promote more efficient use of land and resources) it was considered that Option A could have a positive or negative impact depending on whether allocations would comprise extensions or new sites.
- For SA objectives 1 (ensure adequate minerals provision to meet demand) and 13 (support wider economic development and promote local job opportunities) Option A had a very positive impact. Option B's impact on SA objective 1 could be positive or negative, as there would be a risk that demand would not be met but it would allow for flexibility, and on 13 was uncertain as the details of the criteria in the policy are unknown at this stage.
- Option A therefore scored more favourably than Option B.

ISSUE: 9. Whilst there should not be a shortage of silica sand reserves over the Plan period, if additional reserves will be required to meet demand how should this be addressed in the Plan?

Sustainability Appraisal Objectives	Option A: Criteria based policy subject to need for additional provision		Option B: Identify broad locations		Option C: Rely on development management (DM) policies	
1. Ensure that adequate provision is made to meet local and national mineral demand.	+	Allowing for additional provision to meet demand would have a positive impact. It is unknown whether sites would meet the criteria but given the situation for silica sand it is very unlikely that the criteria would result in a shortfall.	+	The Plan would provide some certainty that provision could be made.	-	Does not provide any certainty and carries the risk that proposals would not come forward to meet demand.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	It is likely that DM policies will address the issues of protecting and enhancing biodiversity but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on the location of sites in relation to markets for the mineral and to opportunities for linking to, e.g. rail/water transport.	?	It is not known at this stage whether the DM policies will include a sustainable transport policy regarding the bulk movement of minerals.
4. Protect the quality of the historic environment,	?	Impact would be dependent on the	?	Impact would be dependent on the location	?	It is likely that DM policies will address the issue of

heritage assets and their settings above and below ground.		details of the criteria in the policy.		of sites in relation to heritage assets.		protecting the historic environment but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to townscape/landscape character.	?	It is likely that DM policies will address the issue of protecting landscape but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites and nature of operations.	?	It is likely that DM policies will address the issue of flooding but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on site characteristics and nature of operations.	?	It is likely that DM policies will address the relevant issues on climate change but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the details of the criteria in	?	Impact would be dependent on the location of sites in relation to high	?	It is likely that DM policies will address the issue of protecting high quality

		the policy.		quality agricultural land and the nature of operations in respect of soil.		agricultural land and soil but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
9. Promote more efficient use of land and resources.	?	Impact would be dependent on the details of the criteria in the policy.	?	Insufficient information.	?	It is likely that DM policies will address the relevant issues on efficient use of land and resources but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on the nature of operations.	?	It is not known at this stage whether the DM policies will address the issues of energy efficiency/renewable energy.
11. Protect and improve local air quality.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on site location and the nature of operations.	?	It is likely that DM policies will address the issue of protecting air quality but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of operation.	?	It is likely that DM policies will address the relevant issues on water quality/efficient use but as the content of such

						policies is unknown at this stage there is insufficient information to determine impact.
13. Support wider economic development and promote local job opportunities.	+	Allowing for additional provision to meet demand would contribute to the wider economy and the potential for local job opportunities.	+	The Plan would provide some certainty that provision could be made which would contribute to the wider economy and the potential for local job opportunities.	-	The lack of certainty for developers would result in less likelihood of sites being developed which could adversely affect the wider economy through lack of supply of the mineral and there would be less potential for local jobs.
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the nature of operations.	?	It is likely that DM policies will address the relevant issues on human health/quality of life but as the content of such policies is unknown at this stage there is insufficient information to determine impact.

Summary

- The likely impact of all 3 options was uncertain for all of the SA objectives, except SA objectives 1 (ensure adequate provision of minerals to meet demand) and 13 (support wider economic development and promote local job opportunities), due to the lack of detail at this stage.
- Distinguishing between the likely effects of the 3 options therefore was restricted to SA objectives 1 (ensure adequate provision of minerals to meet demand), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities).
- For SA objective 1 both Options A and B were considered to have a positive impact whereas Option C had a negative effect.

- For SA objective 13 the impact of Options A and B was positive but Option C's impact was negative.
- Options A and B therefore scored equally favourably and were preferable to Option C.

ISSUE: 10. Industrial dolomite extraction has not taken place in Nottinghamshire before. The Plan will need to address if and how the mineral can be extracted as the main reserves are only found in an environmentally sensitive area.

Sustainability Appraisal Objectives	Option A: Allocate sites		Option B: Use criteria based policy approach	
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	This would provide certainty for the minerals industry to meet demand.	I	There would be a risk that a site located in the area of the only known industrial dolomite resource in Nottinghamshire would not meet the criteria, but this approach would provide more flexibility for the minerals industry if demand occurred during the Plan period.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	The known industrial dolomite resource in Nottinghamshire is located close to Creswell Crags. There is potential for negative impacts if a quarry were to be developed in this area. Any impacts would be dependent on location and design of the quarry, but in allocating a site in this area there could be some control over its extent and scope for buffer zones to protect Creswell Crags.	?	Any impacts would be dependent on the design and location of the quarry and the content of the criteria based policy, but the criteria could be tailored to protect the environmental sensitivity of Creswell Crags.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+	The only known resource could be worked as a satellite extension to the existing Whitwell quarry and would be in close proximity to the existing processing kilns located there.	+	The only known resource could be worked as a satellite extension to the existing Whitwell quarry and would be in close proximity to the existing processing kilns located there.
4. Protect the quality of the historic environment, heritage assets and their	?	The known industrial dolomite resource in Nottinghamshire is	?	Any impacts would be dependent on the design and location of the

settings above and below ground.		located close to Creswell Crag. There is potential for negative impacts if a quarry were to be developed in this area. Any impacts would be dependent on location and design of the quarry, but in allocating a site in this area there could be some control over its extent and scope for buffer zones to protect Creswell Crag.		quarry and the content of the criteria based policy, but the criteria could be tailored to protect the historic environment of Creswell Crag.
5. Protect and enhance the quality and character of our townscape and landscape.	?	The known industrial dolomite resource in Nottinghamshire is located close to Creswell Crag. There is potential for negative impacts if a quarry were to be developed in this area. Any impacts would be dependent on location and design of the quarry, but in allocating a site in this area there could be some control over its extent and scope for buffer zones to protect Creswell Crag.	?	Any impacts would be dependent on the design and location of the quarry and the content of the criteria based policy, but the criteria could be tailored to protect the landscape in relation to Creswell Crag.
6. Minimise impact and risk of flooding.	?	Effect would be dependent on site characteristics and nature of operations.	?	Impact would be dependent on site characteristics, nature of operations and the details of the criteria in the policy.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	?	Effect would be dependent on site characteristics and nature of operations.	?	Impact would be dependent on site characteristics, nature of operations and the details of the criteria in the policy.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of	?	Impact would be dependent on site characteristics, nature of operations and the details of the criteria in the policy.

		soil.		
9. Promote more efficient use of land and resources.	+	A site allocated in the area of the known resource and worked as a satellite extension to the existing Whitwell quarry could utilise the existing infrastructure including the processing kilns.	+	The only known resource could be worked as a satellite extension to the existing Whitwell quarry and could utilise the existing infrastructure including the processing kilns.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Effect would be dependent on the nature of operations.	?	Impact would be dependent on the nature of operations and the details of the criteria in the policy.
11. Protect and improve local air quality.	?	Impact would be dependent on the nature of operations.	?	Impact would be dependent on the nature of operations and the details of the criteria in the policy.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the nature of operations and the details of the criteria in the policy.
13. Support wider economic development and promote local job opportunities.	++	Meeting demand would support economic development at a national level and by allocating sites there would be certainty for developers, creating potential for local job opportunities.	I	There would be a risk that a site located in the area of the only known industrial dolomite resource in Nottinghamshire would not meet the criteria, but this approach would provide flexibility for the minerals industry if demand occurred during the Plan period, creating potential for local job opportunities.
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the nature of operations.	?	Impact would be dependent on the nature of operations and the details of the criteria in the policy.

Summary

- The impact of both options on many of the SA objectives was uncertain, due to the lack of detail at this stage.
- For SA objectives 3 (promote sustainable patterns of movement and the use of more sustainable modes of transport) and 9 (promote more efficient use of land and resources) both options had a positive impact as the location of the only known resource of industrial dolomite in Nottinghamshire is in close proximity to an existing quarry and processing kilns.
- The only clear difference between the 2 options was in relation to the SA objectives relating to economic sustainability. For SA objectives 1 (ensure adequate provision of the mineral to meet demand) and 13 (support wider economic development and promote local job opportunities), Option A was considered to have a very positive impact whereas Option B could have a negative or positive impact.
- Option A therefore scored more favourably than Option B.

ISSUE: 11. How should the Plan identify future building stone reserves to meet local demand?

Sustainability Appraisal Objectives	Option A: Allocate sites / extensions		Option B: Use a criteria based policy approach		Option C: Combination of site allocations and criteria based policy	
1. Ensure that adequate provision is made to meet local and national mineral demand.	++	The allocation of sites/extensions would ensure that demand could be met, provided that they are deliverable.	I	There would be a risk that not enough sites would meet the criteria, but it would potentially allow for flexibility to take local circumstances into account in assessing sites coming forward during the Plan period.	++	The combination of allocations and allowing for additional provision if there is a need would ensure that demand could be met.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features and on the details of the criteria in the policy.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+	As the quarrying would be for local stone largely to meet local demand the distance from source to market would be minimised.	+	As the quarrying would be for local stone largely to meet local demand the distance from source to market would be minimised.	+	As the quarrying would be for local stone largely to meet local demand the distance from source to market would be minimised.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	I	Enabling the supply of local building stone would help to preserve the historic environment, but quarrying has the potential to adversely affect heritage assets.	I	Enabling the supply of local building stone would help to preserve the historic environment, but quarrying has the potential to adversely	I	Enabling the supply of local building stone would help to preserve the historic environment, but quarrying has the potential to adversely affect heritage assets.

				affect heritage assets.		
5. Protect and enhance the quality and character of our townscape and landscape.	I	Enabling the supply of local building stone could protect and enhance townscape but quarrying could adversely affect the landscape.	I	Enabling the supply of local building stone could protect and enhance townscape but quarrying could adversely affect the landscape.	I	Enabling the supply of local building stone could protect and enhance townscape but quarrying could adversely affect the landscape.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the location of sites and nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites and nature of operations and on the details of the criteria in the policy.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	+	As the quarrying would be for local stone largely to meet local demand this would minimise distances between sources and markets which would minimise emissions from road haulage.	+	As the quarrying would be for local stone largely to meet local demand this would minimise distances between sources and markets which would minimise emissions from road haulage.	+	As the quarrying would be for local stone largely to meet local demand this would minimise distances between sources and markets which would minimise emissions from road haulage.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil and on the details of the criteria in the policy.
9. Promote more efficient use of land and resources.	I	More efficient use of land would result from extensions being permitted	?	Impact would be dependent on the details of the criteria in	I	More efficient use of land would result from extensions being permitted

		(as these could utilise the existing site's infrastructure of haul roads, screening/noise bunds, areas for plant and machinery etc) but if new greenfield sites were to be allocated there could be a negative impact.		the policy.		(as these could utilise the existing site's infrastructure of haul roads, screening/noise bunds, areas for plant and machinery etc) but if new greenfield sites are allocated there could be a negative impact. Impact would also be dependent on the details of the criteria in the policy.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Effect would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Effect would be dependent on the nature of operations and on the details of the criteria in the policy.
11. Protect and improve local air quality.	?	Impact would be dependent on site location and the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on site location and the nature of operations and on the details of the criteria in the policy.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of operation.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of operation and on the details of the criteria in the policy.
13. Support wider economic development and promote local job opportunities.	++	Demand would be largely local but there would be some contribution to the wider economy and the potential for local job creation, including for	I	There would be potential for a negative impact should minerals provision be restricted by not enough sites meeting the criteria, but	++	Demand would be largely local but there would be some contribution to the wider economy and the potential for local job creation, including for

		specialists in the use of local stone.		a positive impact could result from the flexibility to assess sites coming forward during the Plan period in the light of local circumstances at the time.		specialists in the use of local stone. This option would best support the production of the whole range of local stones, with the flexibility to assess sites coming forward during the Plan period in the light of local circumstances at the time.
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the nature of operations.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the nature of operations and on the details of the criteria in the policy.

Summary

- The impact of all 3 options against half of the SA objectives was uncertain due to the lack of detail at this stage.
- For SA objectives 4 (protect the quality of the historic environment) and 5 (protect and enhance the quality and character of our townscape and landscape) all 3 options could have either a positive or a negative impact.
- For SA objectives 3 (promote sustainable patterns of movement and the use of more sustainable modes of transport) and 7 (minimise any possible impacts on, and increase adaptability to, climate change) the impact of all 3 options was positive.
- Differences in impacts between the options were limited to SA objectives 1 (ensure that adequate provision is made to meet local and national mineral demand), 9 (ensure that adequate provision is made to meet local and national mineral demand) and 13 (support wider economic development and promote local job opportunities). However even in the case of these objectives Options A and C had the same effects which were very positive in relation to objectives 1 and 13 whilst Option B could have a positive or negative impact. For objective 9 Options A and C could have a positive or negative effect whilst the impact of Option B was uncertain.
- Options A and C therefore equally scored most favourably.

ISSUE: 12. Should a broadly positive stance be adopted to cover any future requirements for coal provision or reworking of spoil tips/lagoons?

Sustainability Appraisal Objectives	Option A: Use a criteria based policy approach		Option B: Rely on development management (DM) policies	
1. Ensure that adequate provision is made to meet local and national mineral demand.	+	This would allow for any schemes that come forward over the life of the Plan to be assessed in the context of specific criteria of particular relevance to the issue. It is unknown whether such schemes would meet the criteria but given the situation in respect of coal it is unlikely that the criteria would result in demand not being met.	-	Does not provide any certainty as to how schemes would be assessed and carries more risk that proposals would not come forward to meet demand.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the issues of protecting and enhancing biodiversity but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is not known at this stage whether the DM policies will include a sustainable transport policy regarding the bulk movement of minerals.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the issue of protecting the historic environment but as the content of such policies is unknown at this stage there is insufficient information to determine impact.

5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the issue of protecting landscape but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the issue of flooding but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the relevant issues on climate change but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the issue of protecting high quality agricultural land and soil but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
9. Promote more efficient use of land and resources.	+	Coal recovery from spoil tips/lagoons is more efficient than new mining; secondary aggregates are also usually recovered in the process and in the longer term if there is a criterion that requires substantial environmental improvement the land would be restored for beneficial use.	?	It is likely that DM policies will address the relevant issues on efficient use of land and resources but as the content of such policies is unknown at this stage there is insufficient information to determine impact.

10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is not known at this stage whether the DM policies will address the issues of energy efficiency/renewable energy.
11. Protect and improve local air quality.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the issue of protecting air quality but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
12. Protect and improve water quality and promote efficient use of water.	+	During reworking of spoil tips/lagoons run off would have to be managed and in the longer term sustainable drainage systems could be put in place to manage and improve water quality, including reedbeds which reduce pollution.	?	It is likely that DM policies will address the relevant issues on water quality/efficient use but as the content of such policies is unknown at this stage there is insufficient information to determine impact.
13. Support wider economic development and promote local job opportunities.	+	This option would be more likely to result in provision to meet demand which would contribute to the wider economy and the potential for local job opportunities.	-	This option would be more likely to result in lack of adequate supply of the mineral to meet demand which could adversely affect the wider economy and there would be less potential for local jobs.
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the details of the criteria in the policy.	?	It is likely that DM policies will address the relevant issues on human health/quality of life but as the content of such policies is unknown at this stage there is insufficient information to determine impact.

Summary

- The likely impact of both options was uncertain for all but four of the SA objectives: SA objectives 1 (ensure adequate provision of minerals to meet demand), 9 (promote more efficient use of land and resources), 12 (protect and improve water quality and promote efficient use of water) and 13 (support wider economic development and promote local job opportunities), due to the lack of detail at this stage.
- For both SA objectives 1 and 13 the impact of Option A was positive and that of Option B was negative, with it being more likely that schemes would come forward and demand would be met under Option A.
- Option A had a positive impact on SA objectives 9 and 12 whereas the effect to Option B on these objectives was uncertain.
- Option A therefore scored most favourably.

ISSUE: 13. What approach should the Plan set out towards hydrocarbons?

Sustainability Appraisal Objectives	Option A: Use a single criteria based policy approach for all hydrocarbons		Option B: Have separate criteria based policies for each type of hydrocarbon		Option C: Allocate sites	
1. Ensure that adequate provision is made to meet local and national mineral demand.	0	No clear link. There is no requirement for the Plan to provide for a specific amount of hydrocarbons and it is not known what would constitute 'adequate' provision.	0	No clear link. There is no requirement for the Plan to provide for a specific amount of hydrocarbons and it is not known what would constitute 'adequate' provision.	0	No clear link. There is no requirement for the Plan to provide for a specific amount of hydrocarbons and it is not known what would constitute 'adequate' provision.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of policies. (Although there may be more scope to fine tune details of policies to take into account any specific issues arising from each individual mineral.)	?	Impact would be dependent on the location of sites in relation to habitats/species/geological features and nature of operations.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policies.	?	Effect would be dependent on the location of sites in relation to markets and on opportunities to use e.g. pipelines for transport.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policies.	?	Impact would be dependent on the location of sites in relation to heritage assets and nature of operations.
5. Protect and enhance the quality and character of our townscape and landscape.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the	?	Impact would be dependent on the location of sites in relation to

				policies.		townscape/landscape character and nature of operations.
6. Minimise impact and risk of flooding.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policies.	?	Impact would be dependent on the location of sites and nature of operations.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	-	The extraction of fossil fuels would be permitted subject to the details in the policy.	-	The extraction of fossil fuels would be permitted subject to the details in the policies.	-	The extraction of fossil fuels would be permitted in principle.
8. Protect high quality agricultural land and soil.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policies.	?	Impact would be dependent on the location of sites in relation to high quality agricultural land and the nature of operations in respect of soil.
9. Promote more efficient use of land and resources.	?	Insufficient information.	?	Insufficient information.	?	Insufficient information.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	-	The extraction of fossil fuels would be permitted subject to the details in the policy.	-	The extraction of fossil fuels would be permitted subject to the details in the policies.	-	The extraction of fossil fuels would be permitted in principle.
11. Protect and improve local air quality.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policies.	?	Impact would be dependent on site location and the nature of operations.
12. Protect and improve water quality and promote efficient use of water.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policies.	?	Impact would be dependent on site location and the nature of operations.
13. Support wider economic	?	Impact would be	?	Impact would be	+	Allocating sites, provided

development and promote local job opportunities.		dependent on the details of the criteria in the policy.		dependent on the details of the criteria in the policies.		they proved to be deliverable, would contribute to provision of energy minerals required for economic development at a national level and create potential for local job opportunities.
14. Protect and improve human health and quality of life.	?	Impact would be dependent on the details of the criteria in the policy.	?	Impact would be dependent on the details of the criteria in the policies.	?	Impact would be dependent on site location and the nature of operations.

Summary

- The likely impact of all 3 options was uncertain in terms of most of the SA objectives, due to the lack of detail at this stage.
- There was no clear link between any of the options and SA objective 1 (ensure that adequate provision is made to meet local and national mineral demand).
- All of the options had a negative impact on SA objectives 7 (minimise any possible impacts on, and increase adaptability to, climate change) and 10 (promote energy efficiency and maximise renewable energy opportunities from new or existing development).
- There was uncertainty about the likely impact of both Options A and B on SA objective 13 (support wider economic development and promote local job opportunities) but the effect of Option C on this objective was considered to be positive.
- On the basis of its positive impact on SA objective 13, Option C scored more favourably than Options A and B.

ISSUE: 14. How should development management (DM) policies be dealt with in the Plan?

Sustainability Appraisal Objectives	Option A: Develop specific policies for specific topic areas.		Option B: Develop criteria based policies for broad groupings of topic areas.	
1. Ensure that adequate provision is made to meet local and national mineral demand.	0	No clear link. The DM policies would not directly relate to the scale of minerals provision.	0	No clear link. The DM policies would not directly relate to the scale of minerals provision.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
5. Protect and enhance the quality and character of our townscape and landscape.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
6. Minimise impact and risk of flooding.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
8. Protect high quality agricultural land and soil.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
9. Promote more efficient use of land and resources.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
10. Promote energy efficiency and	+	A specific policy could address in	-	There would be a risk that

maximise renewable energy opportunities from new or existing development.		detail the relevant issues.		specific issues would not be adequately addressed.
11. Protect and improve local air quality.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
12. Protect and improve water quality and promote efficient use of water.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.
13. Support wider economic development and promote local job opportunities.	0	No clear link. DM policies are unlikely to address this topic.	0	No clear link. DM policies are unlikely to address this topic.
14. Protect and improve human health and quality of life.	+	A specific policy could address in detail the relevant issues.	-	There would be a risk that specific issues would not be adequately addressed.

Summary

- There was a clear distinction between the 2 options, with Option A having a positive impact on most of the SA objectives whereas Option B had a negative impact on most of the SA objectives.
- Option A was therefore the most sustainable.

ISSUE: 15. What approach should be taken to safeguarding minerals?

Sustainability Appraisal Objectives	Option A: Safeguard all mineral resources		Option B: Safeguard economically important mineral resources	
1. Ensure that adequate provision is made to meet local and national mineral demand.	+	All minerals would be identified, although this would not ensure their extraction.	+	The important areas for minerals would be identified, although this would not ensure their extraction.
2. Protect and enhance biodiversity at all levels and safeguard features of geological interest.	0	No clear link.	0	No clear link.
3. Promote sustainable patterns of movement and the use of more sustainable modes of transport.	0	No clear link.	0	No clear link.
4. Protect the quality of the historic environment, heritage assets and their settings above and below ground.	0	No clear link.	0	No clear link.
5. Protect and enhance the quality and character of our townscape and landscape.	0	No clear link.	0	No clear link.
6. Minimise impact and risk of flooding.	0	No clear link.	0	No clear link.
7. Minimise any possible impacts on, and increase adaptability to, climate change.	0	No clear link.	0	No clear link.
8. Protect high quality agricultural land and soil.	0	No clear link.	0	No clear link.
9. Promote more efficient use of land and resources.	+	The need to utilise the mineral resource before it is sterilised by any	+	The need to utilise the mineral resource before it is sterilised by any other

		other development would be highlighted.		development would be highlighted.
10. Promote energy efficiency and maximise renewable energy opportunities from new or existing development.	0	No clear link.	0	No clear link.
11. Protect and improve local air quality.	0	No clear link.	0	No clear link.
12. Protect and improve water quality and promote efficient use of water.	0	No clear link.	0	No clear link.
13. Support wider economic development and promote local job opportunities.	+	Although safeguarding would not ensure extraction it would protect the mineral resource should it be required to provide materials to enable economic development.	+	Although safeguarding would not ensure extraction it would protect the mineral resource should it be required to provide materials to enable economic development.
14. Protect and improve human health and quality of life.	0	No clear link.	0	No clear link.

Summary

- There was no clear link between the options and most of the SA objectives.
- Both of the options had a positive impact in terms of SA objectives 1 (ensure that adequate provision is made to meet local and national mineral demand), 9 (promote more efficient use of land and resources) and 13 (support wider economic development and promote local job opportunities).
- There was no difference between these 2 options in terms of the sustainability objectives.