

**Summary of Assessment of Strategic
Options**

**East Riding of Yorkshire Council and
Kingston upon Hull City Council:
Joint Minerals Development Plan
Document**

Sustainability Appraisal


May 2008



East Riding of Yorkshire Council and Kingston upon Hull City Council: Joint Minerals Development Plan Document

Sustainability Appraisal

Summary of Assessment of Strategic Options

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Summary of Assessment of Strategic Options

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Summary of Assessment of Strategic Options

1. INTRODUCTION

- 1.1 This document presents a summary of the assessment of strategic options developed for the Joint Minerals Development Plan Document (DPD) for East Riding of Yorkshire Council (ERYC) and Kingston Upon Hull City Council (KHCC) conducted as part of the Sustainability Appraisal (SA) of the DPD. The strategic options developed for the DPD are set out in the Issues and Options paper published by ERYC and KHCC in January 2008, which this report accompanies. For the purposes of the assessment an additional 'Do Nothing' strategic option has been included under each Issue heading. The Do Nothing options posit, for each Issue heading, a future scenario involving no alteration to the existing Joint Minerals Local Plan, i.e. an extrapolation of existing conditions based on historic trends and known future developments.
- 1.2 At this stage the SA is primarily concerned with identifying the key sustainability features of each proposed strategic option, and an important purpose of this initial assessment is to inform debate on the issues and assumptions involved, thereby assisting in the process of development and refinement of the strategic options.
- 1.3 It should be noted that a number of the strategic options are not mutually exclusive, and in some cases there are effects arising from the combination of one or more options. These aspects have been taken into account in the assessment.
- 1.4 This document has been prepared by Atkins Limited independently of ERYC and KHCC.

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2. PLAN ISSUES AND OPTIONS

- 2.1 A set of consultation questions is presented in the Issues and Options paper under eight main issue headings. Under a number of the consultation questions a series of one or more options is set out. For the purposes of the SA, for those consultation questions under which no options have been presented the wording of the question itself has been used to form the basis of a strategic option. The full set of options assessed as part of the SA is presented in Table 2.1. Included for each option is a reference indicating from which question in the Issues and Options paper the option originated.
- 2.2 A ‘Do Nothing’ option for each issue heading was also included in the assessment. This option allows the ‘business as usual’ or ‘without Plan implementation’ scenario to be assessed alongside the Plan options. The Plan should aim to improve on the situation which would exist if there were no plan; the inclusion of the ‘Do Nothing’ option helps to test this. In some cases, the options presented in the Issues and Options paper were in essence ‘business as usual’ options. These were incorporated in the consideration of the ‘Do Nothing’ option.

Table 2.1 – Strategic Policy Options

Issue Heading / Option		Reference within the Issues and Options Paper
1	SAFEGUARDING	
1a	Approach to safeguarding of mineral resources	
A	Do Nothing: Safeguard existing permitted quarries and known resources associated with those permitted quarries (In this approach the extent of safeguarding would approximately reflect the coverage of Mineral Consultation Areas in the adopted Local Plans).	Q 1.2 Option A
B	Safeguard those resources set out in Option A along with the known extent of sand and gravel, and chalk resources.	Q 1.2 Option B
C	Safeguard those resources set out in Option A along with clay and industrial quality chalk resources	Q 1.2 Option C
D	Safeguard all mineral resources that have the potential to be of economic value in the future	Q 1.2 Option D
E	Safeguard resources where they fall within areas which are covered by national and international landscape and nature conservation designations (such as Sites of Special Scientific Interest and Special Areas of Conservation) and where there is therefore a general presumption against mineral working	Q 1.3
F	Safeguard an additional ‘buffer zone’ apart from a	Q1.4

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Issue Heading / Option		Reference within the Issues and Options Paper
	mineral resource to prevent development which may constrain the working of a resource	
1b	Approach to safeguarding of facilities for the transportation of minerals by rail and water (railheads and wharves)	
A	Do Nothing: No safeguarding of transportation facilities	Q1.5 Option A
B	Safeguard those transport facilities which are currently in use for minerals or have been in the recent past	Q1.5 Option B
C	As Option B but also safeguard those facilities which have the potential to be used for the transportation of minerals	Q1.5 Option C
1c	Approach to safeguarding of mineral processing facilities	
A	Do Nothing: Only safeguard those facilities which are located at existing quarries.	Q1.6 Option A
B	In addition to facilities located at existing quarries, safeguard other facilities for the processing of secondary or recycled materials and for concrete and road-stone manufacture	Q1.6 Option B
2	EFFICIENT USE OF MINERAL RESOURCES	
A	Do Nothing: Avoid the inclusion of policies and rely on the market and national policy mechanisms such as the Aggregate Levy, the Landfill Tax and the management of the supply of minerals to influence how efficiently resources are used.	Q2.1 Option A
B	Encourage efficiency through measures such as limiting the use of high quality materials only for appropriate purposes, minimisation of mineral waste and utilisation of that waste for beneficial purposes, tailoring policies to the characteristics of the Joint Area's minerals.	Q2.1 Option B
3	SUPPLY OF AGGREGATES	
A	Do Nothing: The Minerals DPD should aim to achieve the level of aggregate sand and gravel supply proposed by the sub-regional apportionments	Q3.3 Option A
B	A lower level than provided for in Option A	Q3.3 Option B
C	A higher level than provided for in Option A	Q3.3 Option C
4	IDENTIFYING LOCATIONS FOR MINERAL EXTRACTION	
4a	Approach to identifying Preferred Areas	
A	Give priority to extensions of existing quarries	Q 4.5 Option A
B	Give priorities to new sites	Q 4.5 Option B
C	Do Nothing: Not give priority to either, and treat each site on its merits	Q 4.5 Option C
4b	Approach in relation to environmental and	

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Issue Heading / Option		Reference within the Issues and Options Paper
	cultural assets when identifying locations for new resources and providing policy guidance for new and existing sites	
A	Do Nothing: Seek to avoid harm to designated sites and areas, with greatest weight given to national and international designations and lesser weight given to sites and areas of local significance.	Q 4.6 Option A
B	As Option A but give the same weight to all levels of designation	Q 4.6 Option B
C	Require that the environmental and cultural qualities of all potential locations for mineral development are considered, regardless of whether they are formally designated	Q 4.6 Option C
D	As Option C but require that any new minerals development should achieve a net gain in environmental quality for the site	Q 4.6 Option D
5	IMPORTED AGGREGATES	
5a	Marine aggregates	
A	Review present policy for marine aggregate landing and handling development in order to provide more capacity for importing marine aggregates	Q5.1
B	Identify and safeguard potential sites for marine aggregate landing and handling development	Q5.2
C	Presumption in favour of safeguarded sites being granted planning permission, subject to meeting defined planning and environmental criteria	Q5.3
D	Do Nothing	
5b	Other imported aggregates	
A	Review present policy for rail depots suitable for importing aggregates in order to provide positively for more capacity	Q5.4
B	Identify and safeguard potential sites for rail depots	Q5.5
C	Presumption in favour of safeguarded rail depot sites being granted planning permission, subject to meeting defined planning and environmental criteria	Q5.6
D	Do Nothing	
6	NON AGGREGATE MINERALS	
A	Clay – Do Nothing: Continue to rely on the general development control policies, which seek to minimise impacts, but do not recognise any period of supply	Q6.1 Option A
B	Clay - Introduce new policies to address safeguarding and ensuring a 25 year period of supply	Q6.1 Option B
C	Chalk - Do Nothing: Continue with the policy approach in the JMLP	Q6.2 Option A
D	Peat – Do Nothing: Continue with the policy approach in the JMLP	Q6.3 Option A
7	ENERGY MINERALS	
A	Coal - Do Nothing:	Q7.1 Option A

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Issue Heading / Option		Reference within the Issues and Options Paper
	Continue with the policy approach in the JMLP	
B	Oil and gas - Do Nothing: Continue with the policy approach in the JMLP	Q7.3 Option A
8	DEVELOPMENT CONTROL AND THE PROTECTION OF LOCAL COMMUNITIES AND NATURAL RESOURCES	
8a	Natural resources	
A	Do Nothing: Aim to avoid harm to natural resources by relying on existing higher level policy guidance	Q8.1 Option A
B	Develop a strategy within the JMDPD for the protection and enhancement of natural resources	Q8.1 Option B
8b	Local community	
A	Do Nothing: Rely on the relevant national guidance in MPS1 and MPS2 to ensure that any adverse effects of minerals development on local communities are avoided or minimised	Q8.3 Option A
B	As Option A, but additionally seek wherever possible to achieve positive benefits for local communities through the management and restoration of mineral sites	Q8.3 Option B
8c	Management and restoration of sites	
A	Do Nothing: Address management and restoration of mineral sites on a site by site basis	Q8.5 Option A
B	Address management and restoration of mineral sites within a framework that requires the delivery of specific environmental benefits	Q8.5 Option B

3. SUMMARY OF ASSESSMENT

INTRODUCTION

- 3.1 Potential sustainability effects for each of the options were assessed in terms of progress towards achieving the SA objectives, as developed during the scoping stage of the appraisal and documented in the SA Scoping Report, using a set of assessment tables, or matrices.
- 3.2 Table 3.1 presents a summary in graphical form of the results of the assessment of strategic policy options, while the sections below present a brief analysis of the results. The tables setting out the assessment of strategic options will be included in the full SA Report

RESULTS OF ASSESSMENT

General Observations

- 3.3 Key general issues which emerged from the assessment are as follows:
- ◆ The majority of the options fail to address the issues raised under the following SA objectives (this is indicated either by a considerable number of ‘neutral/uncertain’ effects or ‘minor’ effects):
 - 10 - To reduce the likelihood of and impact of flooding
 - 14 - To protect the best quality agricultural land
 - ◆ Most of the options resulted in positive effects against the remaining SA objectives; however, some mixed results, consisting of significant adverse effects for some options and significant beneficial effects for other options, are noticeable against the following SA objectives:
 - 1 - To meet local, regional and national need for minerals
 - 3 - To support the development of housing and employment to meet identified needs

Summary of Assessment of Strategic Options

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Summary of Assessment of Strategic Options

Table 3.1 - Summary of Assessment of Strategic Options

SA Objective	Issue 1a						1b			1c		2		3		
	A	B	C	D	E	F	A	B	C	A	B	A	B	A	B	C
1 To meet local, regional and national need for minerals	-2	2	2	3	1	3	-1	1	2	1	2	1	2	2	-0.5	-1
2 To maintain, strengthen and diversify the economy of East Riding and Hull	-1	1	2	3	1	2	-1	1	2	1	2	-0.5	2	3	-1	-2
3 To support the development of housing and employment to meet identified needs	-1	1	1	2	1	-1	-1	1	2	1	2	-0.5	2	2	-2	-1
4 To preserve and enhance residential, business and community amenity and safety	0	0	-1	-1	0	3	-2	1	2	-1	-2	2	3	0	1	-1
5 To provide opportunities for people to value and enjoy the region's natural heritage, participate in recreational activities and encourage a healthy lifestyle	0	0	1	2	0	1	-1	1	1	0	0	0	0	0	0	0
6 To reduce the adverse effects of minerals related road traffic	-1	1	1	2	0	1	-3	2	3	-0.5	-2	2	2	0	-1	-1
7 To protect and improve air quality	-1	-0.5	1	1	0	1	-2	1	1	-0.5	-2	1	2	0	-0.5	-1
8 To minimise resource consumption, waste and increase aggregates recycling	-1	2	2	2	0	0	-1	2	2	1	3	1	2	-1	2	-2
9 To improve the quality of local water resources	0	0	1	1	0	0	-1	-0.5	-0.5	0	0	1	1	0	1	-1
10 To reduce the likelihood of and impact of flooding	0	0	1	1	0	0	0	0	0	0	0	0	0	0	-1	1
11 To protect and enhance biodiversity and important wildlife habitats, and to conserve geology	0	0	1	1	0	2	-0.5	-0.5	-0.5	-0.5	-2	1	2	0	1	-1
12 To protect and enhance heritage assets and their settings	0	0	1	1	0	2	-1	1	0	1	-1	1	2	0	1	-1
13 To protect and enhance the countryside and landscape quality	0	0	1	1	0	2	-1	1	2	1	-1	1	2	0	1	-1
14 To protect the best quality agricultural land	0	0	1	1	0	1	0	0	0	0	-1	1	2	0	1	-1
Average	-0.50	0.46	1.07	1.43	0.21	1.21	-1.11	0.79	1.14	0.25	-0.14	0.79	1.71	0.43	0.14	-0.93

Summary of Assessment of Strategic Options

SA Objective	Issue 4a			4b				5a				5b			
	A	B	C	A	B	C	D	A	B	C	D	A	B	C	D
1 To meet local, regional and national need for minerals	1	1	2	-1	-2	-3	-3	2	1	2	1	2	1	1	2
2 To maintain, strengthen and diversify the economy of East Riding and Hull	1	1	2	-0.5	-1	-2	-3	2	2	2	1	2	1	1	2
3 To support the development of housing and employment to meet identified needs	1	1	2	-1	-2	-2	-3	2	2	2	1	2	1	1	2
4 To preserve and enhance residential, business and community amenity and safety	-0.5	-0.5	2	1	2	2	3	-1	-1	0	1	1	1	2	1
5 To provide opportunities for people to value and enjoy the region's natural heritage, participate in recreational activities and encourage a healthy lifestyle	1	-1	2	1	2	2	3	-2	0	0	-1	0	0	0	1
6 To reduce the adverse effects of minerals related road traffic	-0.5	-0.5	2	1	2	2	3	2	1	2	1	2	1	2	2
7 To protect and improve air quality	-1	-1	2	1	1	2	2	2	1	2	1	1	1	2	1
8 To minimise resource consumption, waste and increase aggregates recycling	0	0	0	0	0	0	0	-1	-1	-1	-1	3	2	2	0
9 To improve the quality of local water resources	-1	-1	2	1	1	2	2	-1	-1	-1	-1	1	1	2	1
10 To reduce the likelihood of and impact of flooding	-1	-1	2	1	1	2	3	0	0	0	0	0	0	0	0
11 To protect and enhance biodiversity and important wildlife habitats, and to conserve geology	-1	-1	2	1	2	3	3	-1	-1	-1	-1	2	1	2	1
12 To protect and enhance heritage assets and their settings	-1	-1	2	1	2	3	1	0	0	0	0	1	1	2	1
13 To protect and enhance the countryside and landscape quality	1	-1	2	2	3	3	3	1	1	2	0	1	1	2	1
14 To protect the best quality agricultural land	-1	-1	2	0	0	1	2	2	1	2	1	0	0	0	0
Average	-0.14	-0.43	1.86	0.54	0.79	1.07	1.14	0.50	0.36	0.79	0.21	1.29	0.86	1.36	1.07

Summary of Assessment of Strategic Options

SA Objective	Issue 6				7		8a		8b		8c	
	A	B	C	D	A	B	A	B	A	B	A	B
1 To meet local, regional and national need for minerals	-2	3	2	-1	2	3	-1	-2	-1	-2	1	-2
2 To maintain, strengthen and diversify the economy of East Riding and Hull	-2	3	2	-0.5	2	3	1	2	1	2	2	-0.5
3 To support the development of housing and employment to meet identified needs	-2	2	2	-0.5	1	1	-1	-2	-1	-2	2	-2
4 To preserve and enhance residential, business and community amenity and safety	2	2	-2	1	2	-1	2	3	2	3	2	3
5 To provide opportunities for people to value and enjoy the region's natural heritage, participate in recreational activities and encourage a healthy lifestyle	2	2	-1	2	2	2	1	2	2	3	2	-0.5
6 To reduce the adverse effects of minerals related road traffic	2	2	-2	1	1	-1	1	2	1	2	0	0
7 To protect and improve air quality	1	1	-2	1	2	2	2	2	2	3	1	2
8 To minimise resource consumption, waste and increase aggregates recycling	0	-1	-1	2	0	0	1	2	1	2	2	2
9 To improve the quality of local water resources	2	2	0	2	2	2	2	3	2	3	1	2
10 To reduce the likelihood of and impact of flooding	3	3	0	2	1	1	2	3	1	3	1	2
11 To protect and enhance biodiversity and important wildlife habitats, and to conserve geology	3	3	-2	3	2	2	1	2	2	3	2	3
12 To protect and enhance heritage assets and their settings	2	2	-2	3	1	1	1	2	2	3	2	2
13 To protect and enhance the countryside and landscape quality	2	2	-2	3	1	1	1	2	1	3	2	2
14 To protect the best quality agricultural land	2	2	-2	0	1	1	1	2	0	0	2	1
Average	1.07	2.00	-0.71	1.29	1.43	1.21	1.00	1.64	1.07	1.86	1.57	1.00

Summary of Assessment of Strategic Options

Scoring of Options Assessment

3	+++	Major positive - likely to result in substantial progress towards the objective
2	++	Medium positive - likely to result in some progress towards the objective
1	+	Minor positive - likely to result in very limited progress towards the objective
0	0	Neutral outcome
-0.5	+/-	Range of possible positive and negative outcomes
0	?	Uncertain outcome
-1	-	Minor negative - likely to be to the very limited detriment of achieving the objective
-2	--	Medium negative - likely to be to the limited detriment of achieving the objective
-3	---	Major negative - likely to be substantially detrimental to achieving the objective

Summary of Assessment of Strategic Options

Issue Heading 1 - Safeguarding

1a - Approach to safeguarding of mineral resources

- 3.4 Of the six options assessed under this heading, Option A, which is the Do Nothing option, is expected to perform worst. It results in an overall negative effect against the SA objectives, primarily because it only seeks to safeguard existing permitted quarries and known resources associated with those permitted quarries, and therefore may result in the sterilisation of unsafeguarded mineral resources elsewhere. In contrast, Option D seeks to safeguard all mineral resources that have the potential to be of economic value in the future and therefore performs the best, with significant positive effects predicted against SA objectives 1, 2, 3, 5, 6 and 8 (*Need for minerals, Local economy, Recreational activities and healthy lifestyle, Local economy, Road traffic and Waste and recycling* respectively). Option F, which promotes the safeguarding of 'buffer zones', also performs well against the SA framework, with similar positive effects to Option D against most of the objectives, and major positive effects against SA objective 4 (*Amenity*). Option E results in a number of minor positive effects against those SA objectives related to the need for minerals, the local economy and housing and employment development (SA objectives 1, 2 and 3 respectively). The safeguarding of minerals does not introduce any presumption in favour of mineral working and therefore effects against the remaining SA objectives cannot be predicted.

1b - Approach to safeguarding of facilities for the transportation of minerals by rail and water (railheads and wharves)

- 3.5 Option A (Do Nothing) performs worse than the other two options under this heading. This option does not promote safeguarding of rail or water transportation facilities and is therefore expected to negatively affect most of the SA objectives. These negative effects are based on the prediction that the option may limit mineral supply, thus affecting the economy, and promote road transportation, with associated disbenefits for natural resources and amenities. However, Option C, which seeks to safeguard the widest range of rail and water transportation facilities, is predicted to have significant positive effects against SA objectives 1, 2, 3, 4, 6, 8 and 13 (*Need for minerals, Local economy, Housing and employment development, Amenity, Road traffic, Waste and recycling and Countryside and landscape quality* respectively) as a result.

1c - Approach to safeguarding of mineral processing facilities

- 3.6 Two options were assessed under this heading. Option A, which seeks to safeguard only those facilities which are located at existing quarries, is expected to have some minor positive effects related to the supply of minerals, maintaining the local economy, supporting the construction industry, providing recycled aggregates, protecting heritage sites and protecting the landscape and countryside (SA objectives 1, 2, 3, 8, 12 and 13 respectively). Option B promotes the safeguarding of

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a wider range of processing facilities, and as a result has a mixed range of effects. Significant positive effects are predicted for SA objectives 1, 2, 3 and 8 (*Need for minerals, Local economy, Housing and employment development and Waste and recycling* respectively). However, negative affects, four of which are significant, are associated with the possibility that mineral processing activity may be extended to a wider geographical area and therefore affecting a larger area in terms of local amenities, minerals related traffic, air quality, natural habitats and species, heritage sites, the landscape and agricultural land (SA objectives 4, 6, 7, 11, 12, 13 and 14 respectively).

Issue Heading 2 - Efficient Use of Mineral Resources

- 3.7 Both of the options assessed under this heading are expected to result in overall beneficial effects against the SA framework, with no adverse effects predicted. Option B performs considerably better than Option A, with significant beneficial effects against 1, 2, 3, 4, 6, 7, 8, 11, 12, 13 and 14. (*Need for minerals, Local economy, Housing and employment development, Amenity, Road traffic, Air quality, Waste and recycling, Biodiversity and habitats, Heritage assets, Countryside and landscape quality and Agricultural land* respectively).

Issue Heading 3 - Supply of Aggregates

- 3.8 Of the three options assessed under this heading, Option A (Do Nothing) is predicted to perform better overall than the other two. SA objectives 1, 2 and 3 (*Need for minerals, Local economy and Housing and employment development* respectively) are all expected to benefit from matching supply with the sub-regional apportionments as advocated by Option A. Option B is expected to result in more positive effects, but these are counterbalanced by more adverse effects, against SA objectives 2, 3, 6 and 10 (*Local economy, Housing and employment development, Road traffic and Flooding* respectively). Option C, which seeks to increase supply above the sub-regional apportionments, is expected to result in mainly negative effects. The assessment predicts that a potential higher level of supply, as provided by this option, may have negative effects for a range of amenities and the natural environment. These effects are likely if there is an increase in demand for minerals and mining companies respond by increasing the rate of extraction and mineral processing in the area.
- 3.9 It should be noted that Minerals Planning Statement 1 states that all apportionments should not be regarded as inflexible. The amounts should be tested during the preparation of Local Development Frameworks to assess the environmental and practical implications of the apportionments. Account should also be taken of other factors such as the current pattern of production. This may mean that options B or C might emerge as performing better overall during the course of the plan process and the decision on which option should be taken forward may need to be revised accordingly.

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Issue Heading 4 - Identifying Locations for Mineral Extraction

4a - Approach to identifying Preferred Areas

- 3.10 Option C (Do Nothing), which seeks to identify Preferred Areas and Areas of Search without giving priority to either and treat each site on its merits, scores substantially better than the other two options under this heading. It is expected to produce significant beneficial effects for all SA objectives except SA objective 8 (*Waste and recycling*). The rationale behind this result is based on the option supporting the development of the mineral industry whilst having due consideration for the effects associated with it. Options A and B are both expected to produce overall negative effects; minor negative effects are predicted for both options against SA objectives relating to air quality, water quality, flooding, wildlife, heritage assets and agricultural land (SA objectives 7, 9, 10, 11, 12 and 14 respectively).

4b - Approach in relation to environmental and cultural assets when identifying locations for new resources and providing policy guidance for new and existing sites

- 3.11 All four options under this heading are expected to produce overall positive effects against the SA framework, with Options C and D producing more significant effects than Options A and B. However, all four options produce negative effects, albeit of differing magnitude, against SA objectives 1, 2 and 3 (*Need for minerals, Local economy and Housing and employment development* respectively). The reason for this result is because the options are expected to restrict the development of the mining industry within the area, but to the benefit of local amenities, wildlife, communities, landscape and heritage.

Issue Heading 5 - Imported Aggregates

5a - Marine aggregates

- 3.12 In terms of overall effects against the sustainability framework, Option C performs best and Option D worst. Whilst Option C performs well against SA objectives 1, 2, 3, 6, 7, 13 and 14 (*Need for minerals, Local economy, Housing and employment development, Road traffic, Air quality, Countryside and landscape quality and Agricultural land* respectively), it results in minor negative effects against those SA objectives related to increasing aggregate recycling, improving water quality and protecting biodiversity (8, 9 and 11 respectively). These negative effects are associated with the increase in water transporation which supports the import of primary aggregates and potentially threatens water ecology. Mixed effects are also predicted against the SA objectives as a result of Option A. The option results in significant benefits for those SA objectives relating to meeting needs for minerals, maintaining the local economy and supporting development, road traffic, air quality and agricultural land (SA objectives 1, 2, 3, 6, 7 and 14 respectively). However, negative effects, most of which are minor, are expected against SA objectives 4, 5, 8, 9 and 11 (*Amenity, Recreational activities and healthy lifestyle, Waste and recycling, Water quality and Biodiversity and habitats* respectively). Option D, which is the Do

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Nothing option, results in only minor or no obvious effects against all of the SA objectives, thus presenting no significant adverse or beneficial effects. The assessment indicates that those options which promote the expansion of rail and water mineral transportation are expected to present the best opportunities for supporting sustainability.

5b - Other imported aggregates

- 3.13 Of the four options assessed under this heading, Option C, which promotes the development of new rail depots on safeguarded sites for importing aggregates, is expected to perform the best overall, with eight significant positive effects predicted against the following SA objectives: 4 (*Amenity*), 6 (*Road traffic*), 7 (*Air quality*), 8 (*Waste and recycling*), 9 (*Water resources*), 11 (*Biodiversity and habitats*), 12 (*Heritage assets*) and 13 (*Countryside and landscape quality*). However, the other three options also perform well, with no adverse effects and a number of significant beneficial effects.

Issue Heading 6 - Non Aggregate Minerals

- 3.14 Under this heading, Options A and B relate to the mining of clay. Overall, Option B performs better than Option A, with a total of 12 significant positive effects, against SA objectives 1 - 6 and 9 - 14 (*Need for minerals, Local economy, Housing and employment development, Amenity, Recreational activities and healthy lifestyle, Road traffic, Water resources, Flooding, Biodiversity and habitats, Heritage assets, Countryside and landscape quality and Agricultural land* respectively). In contrast to Option B, Option A is likely to limit the supply of clay to meet demand and restrict the development of the mineral industry for the benefit of the local economy, resulting in significant negative effects against SA objectives 1, 2 and 3 respectively. Option C relates to the extraction of chalk and is expected to result in a considerable number of both significant and minor adverse effects, for those SA objectives relating to amenity, natural heritage, mineral related road traffic, air quality, waste and recycling, biodiversity, heritage sites, landscape and agricultural land (SA objectives 4, 5, 6, 7, 8, 11, 12, 13, and 14 respectively). However, this option is expected to benefit SA objectives 1, 2 and 3 (*Need for minerals, Local economy and Housing and employment development* respectively). Option D, which relates to limiting the cutting of peat, is expected to benefit all SA objectives relating to community and the natural environment, but produce minor adverse effects against SA objective 1 (*Need for minerals*).

Issue Heading 7 - Energy Minerals

- 3.15 Option A relates to coal extraction, and is predicted to result in an overall benefit for sustainability. The option seeks to avoid detrimental impacts on the plan area, in particular local amenities and the Lower Derwent Valley SPA/Ramsar site. It is therefore expected to perform well against those SA objectives relating to local amenity, air and water quality, biodiversity and providing opportunities for recreation

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an healthy lifestyles (SA objectives 4, 7, 9, 11 and 5 respectively). Option A also scores well against SA objectives 1 and 2 (*Need for minerals* and *Local economy* respectively). Option B, which relates to the promotion of oil and gas exploration and extraction, is also expected to produce significant positive effects for SA objectives 1 and 2. Although a formal Environmental Impact Assessment (EIA) is not required, applications for borehole exploration and appraisal are expected to have regard to EIA requirements. New production facilities will need to be accompanied by an Environmental Statement where appropriate. Option B therefore performs similarly to Option A against most of the environmental and social objectives, apart from Objective 4 (*Local amenity*), where residual effects are more likely.

Issue Heading 8 - Development Control and the Protection of Local Communities and Natural Resources

8a - Natural resources

- 3.16 Both of the options assessed under this heading are expected to result in positive effects against the majority of SA objectives. The options seek to reduce negative effects to natural resources, therefore benefiting those SA objectives relating to the natural environment (SA objectives 6 – 14) which in turn is expected to benefit the SA objectives relating to communities (SA objectives 2, 4 and 5). However, these protective policies have the potential to reduce opportunities to extract minerals in the area, thus negatively affecting SA objectives relating to the supply of minerals and supporting housing and employment development (SA objectives 1 and 3 respectively). Option B, which promotes the development of a strategy within the JMDDP for the protection and enhancement of natural resources is expected to produce more significant benefits than Option A, which relies solely on higher level policy.

8b - Local community

- 3.17 Two options were assessed under this heading. Both are expected to benefit those SA objectives relating to the natural environment and communities. Option B, which seeks wherever possible to achieve positive benefits for local communities through the management and restoration of mineral sites, is expected to perform better in sustainability terms than Option A. It is predicted to have major beneficial effects for SA objectives relating to the local economy, local amenities, healthy lifestyles, road transportation, air quality, waste and recycling, water resources, flooding, biodiversity, heritage assets and landscape quality (SA objectives 2, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 13 respectively). Owing to the restrictive measures advocated by both options to support local communities, the options have the potential to constrain mineral development, and therefore produce negative effects against SA objectives 1 and 3 (*Need for minerals* and *Housing and employment development*) with Option B resulting in more significant negative effects.

Summary of Assessment of Strategic Options

8c - Management and restoration of sites

- 3.18 Managing and restoring mineral sites on a site by site basis, as advocated by Option A, is expected to produce positive effects for all SA objectives, except SA objective 6 (*Road traffic*) where no effects are predicted. Option B, which proposes a framework that requires the delivery of specific environmental benefits, may have negative effects for the development of mineral sites, and therefore is predicted to have adverse effects for SA objectives 1 and 3 (*Need for minerals* and *Housing and employment development* respectively). However, the benefits for environmental resources and communities are expected to be slightly higher than under Option A for SA objectives 4, 7, 9, 10, 11 (*Amenity, Air quality, Water resources, Flooding and Biodiversity and habitats*).

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