

# **BOURNEMOUTH, DORSET AND POOLE MINERALS CORE STRATEGY**

## **Draft Sustainability Appraisal of Options**

### **Introduction**

Sustainability appraisal is a systematic and iterative process undertaken during the preparation of a plan or strategy. Its role is to assess the extent to which the emerging policies and proposals will help to achieve relevant environmental, social and economic objectives. In doing so, it provides an opportunity to consider ways in which the plan or strategy can contribute to improvements in environmental, social and economic conditions, as well as a means of identifying and addressing any adverse effects that draft policies and proposals might have.

### **Legal Framework**

Section 39 of the Planning and Compulsory Purchase Act, 2004 requires Local Development Documents (including Minerals and Waste Development Documents) to be prepared with the objective of contributing to the achievement of sustainable development. Sustainable development will ensure a better quality of life for present and future generations.

Section 19 (5) of the Act requires Local Planning Authorities to carry out an appraisal of the sustainability of the proposals in each document and prepare a report of findings of the appraisal. Sustainability appraisal is integral to document preparation as a means of assessing their potential social, environmental and economic effects. It is a positive tool for developing policies to ensure that they reflect sustainable development principles. The appraisal should take place in parallel with the formulation of policies.

The European Strategic Environment Assessment Directive 2001/42/EC requires an environmental assessment of plans and programmes prepared by public authorities that are likely to have significant effect upon the environment. This process is referred to commonly as “Strategic Environmental Assessment” (SEA), and covers relevant plans and programmes whose preparation began after 21 July 2004. A key requirement of the SEA process is the production of an environmental report describing the likely significant effects of implementation of the plan and alternative options which were considered when producing the plan. This Sustainability Appraisal incorporates the requirements of the SEA Directive.

## **Sustainability Appraisal Scoping Report**

The Scoping Report was the first stage of this process, setting out the scope of the appraisal and the information to be gathered or relied upon. It will apply to all the minerals development plan documents that will be prepared (currently the Minerals Core Strategy and the Minerals Site Allocations Document). The main part of the scoping report was organised by topics identified in the SEA Directive, plus social and economic topics to fulfil the requirements of Government guidance on sustainability appraisal and the Planning and Compulsory Purchase Act 2004. Each topic was explored and analysed using the tasks suggested in the guidance. Relevant plans, programmes and policies were identified and reviewed, and their implications for the minerals development plan documents (DPDs) considered. Initial baseline information, mainly in the form of maps, was collected and included in the report.

Sustainability issues were then identified and their implications assessed for minerals DPDs and the baseline information to be collected. Objectives were developed to address these sustainability issues, as well as reflecting international, national, regional and local objectives. Indicators were then developed to measure how well the emerging policies and strategies would perform and help to achieve sustainability objectives. After completing the topic-based analysis, the sustainability objectives and indicators were brought together to link with the South West Regional Spatial Strategy Sustainability Appraisal Framework.

The consultation on the draft scoping report took place between 1 March and 5 April 2007, and drew a wide range of responses. All of the individual representations were assessed and the authorities' responses to these are included in a detailed report. Where changes to the scoping report were considered necessary, these are being made. There was no need to change the sustainability objectives themselves as a result of the consultation.

## **Draft Sustainability Appraisal of the Options**

The draft Issues and Options Report identifies various issues relating to particular mineral types or topics (such as safeguarding). Once the options for addressing the various issues were identified in the Issues and Options Report, it was necessary to assess each option (wherever possible) against the fifteen sustainability objectives.

The Sustainability Objectives are:

1. Maintain, conserve and enhance biodiversity, fauna, flora and geodiversity
2. Protect and enhance landscape and coast
3. Protect cultural heritage
4. Protect water resources
5. Maintain soil quality
6. Limit risk of flooding
7. Improve air quality
8. Conserve and safeguard mineral resources
9. Improve health
10. Reduce noise and dust and improve quality of life
11. Encourage and facilitate sustainable methods of transporting minerals
12. Provide an appropriate and sustainable supply of minerals to meet the needs of society
13. Promote economic development and job creation
14. Promote public involvement
15. Minimise waste

The appraisal involved assessing the performance of each option against each objective using a series of matrices. The appraisal was based on professional judgement, officer discussions, technical knowledge and the evidence base. It was found necessary to make a number of assumptions for each topic/mineral type in order to confine the scope of the appraisal process and provide some degree of consistency in the process. The impacts of each option and its performance against each sustainability objective are shown as positive (+), negative (-), no significant impact/neutral (0) and no direct relationship (N/A). A commentary has been provided to explain the outcome for each assessment (the text in each box in the matrices). Following this, the impacts of the options on each sustainability objective have been compared and a conclusion drawn (the text in the right hand column in the matrices). Finally, an overall assessment has been made of all the options against the sustainability objectives (the text in the box at the foot of each matrix). This final short summary is also shown in a box under each range of options in the draft Issues and Options Report.

Clearly, the assumptions and the outcomes of the assessments are largely subjective, but at this stage in the preparation of the Minerals Core Strategy, it is hoped that any reactions and responses to these by stakeholders will help the selection of preferred options for the next stage of plan development. As the Minerals Core Strategy is not site specific, it is usually difficult to assess what the impact of the options will be with any accuracy.

Some options in the draft Issues and Options Report (such as “other” or “don’t know”) are clearly not appropriate for assessment. Also, some issues (such as the end date for the Minerals Core Strategy) are raised in order to obtain the views and opinions of stakeholders, and as such are not subjected to sustainability appraisal. The text in the Sustainability Appraisal explains where this situation arises.

Chapters 3 to 11 of the draft Issues and Options Report include options, many of which have been appraised. The draft SA considers each chapter in turn, setting out the assumptions (where these were necessary) and then each issue with its associated options. Every issue is identified by a short reference, for example BC1 is the first issue applying to ball clay. These references are also shown in the Issues and Options Report.

## **Time Period of the Core Strategy (Chapter 3 of the Issues and Options Report)**

TP 1: What should the end period for the MCS be?

*There is no need to appraise this issue as this question is for the purpose of obtaining the views of stakeholders.*

## Ball Clay (Chapter 4 of the Issues and Options Report)

### Assumptions

1. Extraction of Ball Clay gives rise to environmental impacts
2. There is a market for Ball Clay and there will be a continued need for Ball Clay during the Plan period
3. Imerys will continue to be the only company producing Ball Clay in Dorset
4. Ball Clay is a mineral of national and international importance
5. There are Ball Clay reserves throughout the Ball Clay Consultation Area but the highest quality reserves occur south of the River Frome within the AONB
6. There is a need to source and blend clays from both within and outside of the AONB if supply is to be maintained.
7. Extraction will continue on a campaign basis sourcing clays from different sites as required
8. Sand and some gravel is found in association with Ball Clay deposits
9. There are environmental impacts associated with the extraction of sand and gravel from Ball Clay workings
10. Ball Clay extraction will not take place within or where it would adversely affect, internationally designated areas

BC 1: Should the MCS make provision for further reserves of Ball Clay during the Plan Period?

Sustainability Objectives	Option 1: The MSC should make provision for further reserves of Ball Clay during the Plan Period	Option 2: The MCS should not make provision for further reserves of Ball Clay during the Plan Period	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on existing habitats during extraction but potential opportunity to increase biodiversity in long term. Opportunity for positive impact on geodiversity.	0 Neutral, however no opportunity to enhance biodiversity and geodiversity as a result of new excavations.	Option 1 would be likely to have negative impact on biodiversity due to loss of habitat and close proximity to nationally designated areas. However the restoration of extraction sites would create opportunities for the enhancement of biodiversity and geodiversity.
2. Protect and enhance landscape and coast	- Adverse impact on landscape, minimal impact on coast.	0 Neutral.	The provision of further reserves of Ball Clay (Option 1) will have a negative impact on the landscape.

Sustainability Objectives	Option 1: The MSC should make provision for further reserves of Ball Clay during the Plan Period	Option 2: The MCS should not make provision for further reserves of Ball Clay during the Plan Period	Assessment
3. Protect cultural heritage	0 Neutral.	0 Neutral.	No significant effects.
4. Protect water resources	- Possible adverse effect on groundwater resources.	0 Neutral.	Provision of further reserves (Option 1) could have a negative impact on water resources
5. Maintain soil quality	- Removal of soil has negative impact.	+ Soil quality would be maintained.	Option 2 supports the maintenance of soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects
7. Improve air quality	- Dust and traffic movements reduce air quality.	+ Eventually improve air quality as a result of cessation of quarrying activities.	Option 2 eventually improves air quality.
8. Conserve and safeguard mineral resources	- Continued extraction will reduce mineral resources.	+ By not making provision for further reserves mineral resources will be conserved.	Option 2 conserves mineral resources.
9. Improve health	0 Neutral, as positive and negative impacts are marginal.	0 Neutral, as positive and negative impacts are marginal.	Both options have no significant impact on health.
10. Reduce noise and dust and improve quality of life	- Continued quarrying would not reduce noise and dust.	+ Eventual cessation of quarrying would reduce noise and dust.	Option 2 would eventually have a positive impact.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	Neither option refers to transportation.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Continued provision would be likely to satisfy society's needs for Ball Clay.	- The lack of additional provision would eventually result in failure to meet society's needs for Ball Clay.	Option 1 provides the opportunity for an appropriate and sustainable supply of Ball Clay for society's needs.

Sustainability Objectives	Option 1: The MSC should make provision for further reserves of Ball Clay during the Plan Period	Option 2: The MCS should not make provision for further reserves of Ball Clay during the Plan Period	Assessment
13. Promote economic development and job creation	+ Provision of further reserves sustains Ball Clay supply and associated employment in the ceramics industry. Locally c.40 jobs are dependent on local Ball Clay extraction.	- No further provision of reserves would reduce the supply of Ball Clay and put the c.40 jobs associated with local extraction at risk.	Option 1 would sustain local employment associated with Ball Clay extraction.
14. Promote public involvement	N/A	N/A	Neither option relates to the promotion of public involvement.
15. Minimise waste	0 Neutral.	0 Neutral.	No significant effects.
The provision of additional reserves (Option 1) supports the supply of Ball Clay in terms of economic and social benefits. No additional provision of reserves (Option 2) generally has more environmental benefits but will eventually result in the cessation of Ball Clay working in Dorset.			

BC 2: Should the Ball Clay Consultation Area be updated?

*There is no need to appraise this issue as this question is for the purpose of obtaining the views of stakeholders.*

BC 3: Should the MCS contain a presumption in favour of extraction only taking place outside the AONB?

Sustainability Objectives	Option 1: Allow extraction within the AONB to provide an adequate range of grades of Ball Clay to meet future needs.	Option 2: Further reserves of Ball Clay should not be identified within the AONB	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on existing habitats during extraction but potential opportunity to increase biodiversity in long term. Opportunity for positive impact on geodiversity.	0 Neutral, however no opportunity to enhance biodiversity and geodiversity as a result of new excavations.	Option 1 would be likely to have negative impact on biodiversity due to loss of habitat and close proximity to nationally designated areas. However the restoration of extraction sites would create opportunities for the enhancement of biodiversity and geodiversity.
2. Protect and enhance landscape and coast	- Adverse impact on landscape within AONB, minimal impact on coast.	+ The eventual cessation of working within the AONB will protect landscape.	Option 2 would benefit landscape compared to Option 1.
3. Protect cultural heritage	0 Neutral.	0 Neutral.	No significant effects.
4. Protect water resources	- Possible adverse effect on groundwater resources.	0 Neutral.	Provision of further reserves (Option 1) could have a negative impact on water resources
5. Maintain soil quality	- Removal of soil has negative impact.	+ Soil quality would be maintained.	Option 2 supports the maintenance of soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects
7. Improve air quality	- Dust and traffic movements reduce air quality.	+ Eventually improve air quality as a result of cessation of quarrying activities.	Option 2 eventually improves air quality.

Sustainability Objectives	Option 1: Allow extraction within the AONB to provide an adequate range of grades of Ball Clay to meet future needs.	Option 2: Further reserves of Ball Clay should not be identified within the AONB	Assessment
8. Conserve and safeguard mineral resources	- Continued extraction will reduce mineral resources.	+ By not making provision for further reserves mineral resources will be conserved.	Option 2 conserves mineral resources.
9. Improve health	0 Neutral, as positive and negative impacts are marginal.	0 Neutral, as positive and negative impacts are marginal.	Both options have no significant impact on health.
10. Reduce noise and dust and improve quality of life	- Continued quarrying would not reduce noise and dust.	+ Eventual cessation of quarrying would reduce noise and dust.	Option 2 would eventually have a positive impact.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	Neither option refers to transportation.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Continued provision within the AONB would be likely to satisfy society's needs for Ball Clay.	- The lack of additional provision within the AONB would eventually result in failure to meet society's needs for Ball Clay.	Option 1 provides the opportunity for an appropriate and sustainable supply of Ball Clay for society's needs.
13. Promote economic development and job creation	+ Provision of further reserves within the AONB sustains Ball Clay supply and associated employment in the ceramics industry. Locally c.40 jobs are dependent on local Ball Clay extraction.	- No further provision of reserves within the AONB would reduce the supply of Ball Clay and put the c.40 jobs associated with local extraction at risk.	Option 1 would sustain local employment associated with Ball Clay extraction.
14. Promote public involvement	N/A	N/A	Neither option relates to the promotion of public involvement.
15. Minimise waste	0 Neutral.	0 Neutral.	No significant effects.
Option 1 performs well in terms of providing an appropriate and sustainable supply of Ball Clay. Option 2 will lead to the eventual cessation of the Ball Clay industry in Dorset but would benefit the landscape.			

BC 4: Is lorry transport the only appropriate and viable method of moving extracted Ball Clay to Furzebrook for processing?

BC 5: Currently all Ball Clay leaving Furzebrook travels by road either to Poole or Southampton for export by sea or to other destinations within the UK. Is it appropriate and viable for a proportion of this material to be moved by rail?

*There is no need to appraise these issues as the questions are for the purpose of obtaining the views of stakeholders.*

BC 6: Should the associated sale of sand and gravel from Ball Clay workings be supported?

Sustainability Objectives	Option 1: Sand and gravel should be extracted, for sale, from Ball Clay workings whenever possible	Option 2: Allow the extraction and sale of sand and gravel to a limited extent such that restoration is not compromised	Option 3: Sand and gravel should not be extracted, for sale, from Ball Clay workings	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on exiting habitats during extraction but potential opportunity to increase biodiversity in long term. Opportunity for positive impact on geodiversity.	- Adverse impact on exiting habitats during extraction but potential opportunity to increase biodiversity in long term. Opportunity for positive impact on geodiversity.	- Adverse impact on exiting habitats during extraction but potential opportunity to increase biodiversity in long term. Opportunity for positive impact on geodiversity.	All options would have a negative impact on the existing biodiversity due to loss of habitat and close proximity to nationally designated areas.
2. Protect and enhance landscape and coast	- Adverse impact on landscape, minimal impact on coast.	- Adverse impact on landscape, minimal impact on coast.	- Adverse impact on landscape, minimal impact on coast.	All options would have a negative impact on the landscape. However Option 3 would have the least impact by retaining material to aid the recreation of landform.
3. Protect cultural heritage	N/A	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Sand and gravel should be extracted, for sale, from Ball Clay workings whenever possible	Option 2: Allow the extraction and sale of sand and gravel to a limited extent such that restoration is not compromised	Option 3: Sand and gravel should not be extracted, for sale, from Ball Clay workings	Assessment
4. Protect water resources	0 Neutral.	0 Neutral.	0 Neutral.	No significant effect.
5. Maintain soil quality	- Potential negative impact if the removal of sand and gravel is detrimental to drainage scheme and overall restoration.	0 Neutral.	0 Neutral.	Option 1 is most likely to have an impact on the future maintenance of soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	0 Neutral.	No significant effect.
7. Improve air quality	- Dust and traffic associated with the removal of sand and gravel would reduce air quality	- Dust and traffic associated with the removal of sand and gravel would reduce air quality	0 Neutral	Not extracting the associated sand and gravel (Option 3) will create no additional traffic movements. Option 1 and 2 would create additional traffic movements but option 1 would have the most significant impact on air quality.
8. Conserve and safeguard mineral resources	- Extraction of sand and gravel will reduce mineral resources.	- Extraction of sand and gravel will reduce mineral resources.	+ Not extracting associated sand and gravel mineral resources will be conserved.	Option 3 conserves mineral resources.
9. Improve health	0 Neutral, as positive and negative impacts are marginal.	0 Neutral, as positive and negative impacts are marginal.	0 Neutral, as positive and negative impacts are marginal.	There is no significant impact on health from any of the options.
10. Reduce noise and dust and improve quality of life	- Traffic associated with the removal of sand and gravel would adversely effect noise and dust levels.	- Traffic associated with the removal of sand and gravel would adversely effect noise and dust levels.	0 Neutral	Not extracting the associated sand and gravel (Option 3) will create no additional

Sustainability Objectives	Option 1: Sand and gravel should be extracted, for sale, from Ball Clay workings whenever possible	Option 2: Allow the extraction and sale of sand and gravel to a limited extent such that restoration is not compromised	Option 3: Sand and gravel should not be extracted, for sale, from Ball Clay workings	Assessment
				traffic movements. Option 1 and 2 would create additional traffic movements but option 1 would have the most significant impact from noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Extraction of sand and gravel would contribute to the needs of society.	+ Extraction of sand and gravel would contribute to the needs of society.	- There would be no contribution to meeting the needs of society if associated sand and gravel is not extracted.	Option 1 and to a limited extent Option 2, would contribute to meeting society's need for sand and gravel.
13. Promote economic development and job creation	+ Marginal contribution to economic development and job creation.	+ Marginal contribution to economic development and job creation.	- Marginal adverse effect on economic development and job creation.	Options 1 and 2 make marginal contributions to economic development and job creation.
14. Promote public involvement	N/A	N/A	N/A	None of the options relate to the promotion of public involvement.
15. Minimise waste	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
Option 3 performs best in relation to the environment. Option 1 performs best in terms of the economy; however, overall Option 2 has the potential to perform the best through minimal impact on the environment whilst contributing to the economy.				

## Aggregates (Chapter 5 of the Issues and Options Report)

### Assumptions

1. Extraction of aggregates gives rise to environmental impacts
2. The overall demand for sand and gravel produced within Dorset will not change during the plan period
3. There will not be an adequate supply of sand and gravel to meet the aggregates guidelines during the plan period without the provision of further reserves
4. Meeting the guidelines requirement would result in significant adverse impacts
5. There will be licensed marine dredged sand and gravel available throughout the Plan period
6. The overall demand for crushed rock produced within Dorset will not change during the plan period
7. There will be an adequate supply of crushed rock produced within Dorset to meet demand for it during the plan period and therefore no need to provide for additional reserves
8. Any reduction in output of gravel from Dorset will lead to increased demand for imported gravel and/or crushed rock
9. Crushed Portland Stone is only suitable as lower grade aggregate
10. There will continue to be construction and demolition waste available for recycling
11. Construction and demolition waste recycling gives rise to environmental impacts
12. Construction and demolition waste recycling operations located in quarries will be limited to the life of the quarry

AS 1: Should Dorset continue to make provision for land won sand and gravel in line with Government and Regional guidelines?

Sustainability Objectives	Option 1: Meet the guidelines requirement even if this results in significant adverse impacts	Option 2: Only partially meet the guidelines requirement in order to avoid significant adverse impacts	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on biodiversity despite potential to enhance biodiversity in longer term.	+ Would protect biodiversity.	Option 2 would protect biodiversity.
2. Protect and enhance landscape and coast	- Adverse impact on landscape.	+ Would protect landscape.	Option 2 would protect landscape.
3. Protect cultural heritage	- Adverse impact on cultural heritage.	+ Would protect cultural heritage.	Option 2 would protect cultural heritage.

Sustainability Objectives	Option 1: Meet the guidelines requirement even if this results in significant adverse impacts	Option 2: Only partially meet the guidelines requirement in order to avoid significant adverse impacts	Assessment
4. Protect water resources	- Adverse impact on water resources.	+ Would protect water resources.	Option 2 would protect water resources.
5. Maintain soil quality	- Would not maintain soil quality.	- Would not maintain soil quality.	Neither option would maintain soil quality but Option 1 would have greater adverse impact.
6. Limit risk of flooding	- Adverse impact on flooding but may have potential for flood alleviation in river valleys.	+ Potential for flood alleviation if in river valleys.	Option 2 more likely to limit risk of flooding although both options may have potential for flood alleviation.
7. Improve air quality	- Air quality will not be improved.	- Air quality will not be improved.	Neither option improves air quality although Option 1 is likely to have a greater adverse impact.
8. Conserve and safeguard mineral resources	- Meeting guidelines would not conserve mineral resources.	- Meeting guidelines, even to a limited extent, would not conserve mineral resources.	Neither option would conserve mineral resources although Option 2 is likely to conserve more mineral resources than Option1.
9. Improve health	- Health would not be improved.	- Health would not be improved.	Neither option would improve health.
10. Reduce noise and dust and improve quality of life	- Meeting guidelines would not reduce noise and dust.	- Meeting guidelines would not reduce noise and dust.	Neither option would reduce noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Meet the guidelines requirement even if this results in significant adverse impacts	Option 2: Only partially meet the guidelines requirement in order to avoid significant adverse impacts	Assessment
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Would provide an appropriate and sustainable supply of minerals.	- Would result in failure to supply minerals to meet the needs of society.	Option 1 would meet society's needs for minerals.
13. Promote economic development and job creation	+ Would promote economic development and sustain employment levels.	- Would eventually lead to job losses and will not promote economic development.	Option 1 would promote economic development and sustain employment levels.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	0 Neutral.	0 Neutral.	No significant effects.
Option 1 has economic benefits and maintains the supply of minerals but has detrimental impact on the environment. Option 2 has greater environmental benefits but will eventually fail to maintain supply of minerals.			

AS 2: If the guidelines requirement is not met to such an extent that Dorset's own requirements cannot be met, which source of aggregates should be increased to ensure a sustainable supply in the county?

*Explanatory Note: Assessment takes no account of the benefits from reduced local extraction which is considered under AS1 above.*

Sustainability Objectives	Option 1: Importation of aggregates from other counties by road	Option 2: Importation of aggregates from other counties by rail with final delivery by road	Option 3: Landing of marine sand and gravel with final delivery by road	Option 4: Local and imported secondary and recycled materials with final delivery by road	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on biodiversity.	- Adverse impact on biodiversity.	- Adverse impact on biodiversity.	- Adverse impact on biodiversity.	None of the options will protect, conserve and enhance biodiversity. Option 1 is likely to have the greatest adverse impact.
2. Protect and enhance landscape and coast	0 Neutral.	0 Neutral.	- Potential adverse impact on coast.	0 Neutral.	Option 3 is more likely to have an adverse impact on the coast due to the need for the requirement for additional facilities.
3. Protect cultural heritage	N/A	N/A	N/A	N/A	No direct relationship.
4. Protect water resources	N/A	N/A	N/A	N/A	No direct relationship.
5. Maintain soil quality	N/A	N/A	N/A	N/A	No direct relationship.
6. Limit risk of flooding	N/A	N/A	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Importation of aggregates from other counties by road	Option 2: Importation of aggregates from other counties by rail with final delivery by road	Option 3: Landing of marine sand and gravel with final delivery by road	Option 4: Local and imported secondary and recycled materials with final delivery by road	Assessment
7. Improve air quality	- Adverse impact on air quality.	- Adverse impact on air quality.	- Adverse impact on air quality.	- Adverse impact on air quality.	None of the options will improve air quality. Option 1 likely to have the greatest adverse impact as a result of longer distance travelled by lorry.
8. Conserve and safeguard mineral resources	+ Will conserve local mineral resources.	+ Will conserve local mineral resources.	+ Will conserve local mineral resources.	+ Will conserve mineral resources both in Dorset and elsewhere.	All options conserve mineral resources within Dorset. Option 4 will also contribute towards conserving mineral resources elsewhere.
9. Improve health	- Traffic movements reduce air quality and therefore do not improve health.	- Traffic movements reduce air quality and therefore do not improve health.	- Traffic movements reduce air quality and therefore do not improve health.	- Traffic movements reduce air quality and therefore do not improve health.	None of the options will improve health. Option 1 likely to have the greatest adverse impact as a result of longer distance travelled by lorry.
10. Reduce noise and dust and improve quality of life	- Traffic movements will increase noise and dust.	- Traffic movements will increase noise and dust.	- Traffic movements will increase noise and dust.	- Traffic movements will increase noise and dust.	None of the options will reduce noise and dust.

Sustainability Objectives	Option 1: Importation of aggregates from other counties by road	Option 2: Importation of aggregates from other counties by rail with final delivery by road	Option 3: Landing of marine sand and gravel with final delivery by road	Option 4: Local and imported secondary and recycled materials with final delivery by road	Assessment
11. Encourage and facilitate sustainable methods of transporting minerals	- Will not encourage sustainable methods of transporting minerals.	+ Encourages sustainable methods of transporting minerals.	- Will not encourage sustainable methods of transporting minerals.	- Will not encourage sustainable methods of transporting minerals.	Only Option 2 encourages a sustainable method of transporting minerals.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Will contribute to the provision of a continued supply of minerals to meet the needs of society.	+ Will contribute to the provision of a continued supply of minerals to meet the needs of society.	+ Will contribute to the provision of a continued supply of minerals to meet the needs of society.	+ Will contribute to the provision of a continued supply of minerals to meet the needs of society.	All options will ensure a continued supply of minerals to meet the needs of society.
13. Promote economic development and job creation	0 Marginal impacts.	0 Marginal impacts.	0 Marginal impacts.	0 Marginal impacts.	None of the options will have a significant impact on economic development or job creation.
14. Promote public involvement	N/A	N/A	N/A	N/A	No direct relationship.
15. Minimise waste	N/A	N/A	N/A	+ Increased reliance on recycled materials will reduce waste.	Option 4 will assist in minimising waste.
Option 1 has the greatest adverse impact on the environment as a result of longer distance travelled by lorry closely followed by Option 4. Options 2 and 3 have greatest benefit through minimising road transportation.					

AS 3: Any additional provision for land won sand and gravel, in Dorset, can be made in a number of ways through the MCS. Which of the following methods is the most appropriate?

*There is no need to appraise this issue as this question is for the purpose of obtaining the views of stakeholders.*

AS 4: If further provision of land won sand and gravel is necessary which location is preferred?

Sustainability Objectives	Option 1: River Valley gravels	Option 2: Plateau gravels	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on existing habitat during extraction but potential opportunity to increase biodiversity through creation of wetland in the long term.	- Adverse impact on existing habitat during extraction but potential opportunity to increase biodiversity through creation of heathland in the long term.	Both options have adverse impacts on biodiversity but both have potential to enhance biodiversity in the longer term.
2. Protect and enhance landscape and coast	- Adverse impact through permanent change to landscape character if left as open water.	- Adverse impact on landscape.	Both options have adverse impacts on landscape, but Option 2 is unlikely to result in open water. However, both have potential to create new landscapes.
3. Protect cultural heritage	N/A	N/A	No direct relationship.
4. Protect water resources	- Extraction will not protect water resources.	0 Likely to have insignificant impact on water resources.	Option 1 is likely to have a greater detrimental effect on water resources when wet working or dewatering is necessary.
5. Maintain soil quality	- Removal of soil has negative impacts.	- Removal of soil has negative impacts.	Option 2 may have less negative impact as soils are likely to be of poorer quality.
6. Limit risk of flooding	+ Extraction may provide opportunities for flood alleviation.	0 Unlikely to pose any risk of flooding.	Option 1 has benefits over Option 2.
7. Improve air quality	- Will not improve air quality.	- Will not improve air quality.	Neither option will improve air

Sustainability Objectives	Option 1: River Valley gravels	Option 2: Plateau gravels	Assessment
			quality, but Option 2 is more likely to generate dust.
8. Conserve and safeguard mineral resources	- Extraction will reduce mineral resources.	- Extraction will reduce mineral resources.	Neither option will conserve mineral resources.
9. Improve health	- Health will not be improved.	- Health will not be improved.	Neither option will improve health.
10. Reduce noise and dust and improve quality of life	- Will not reduce noise and dust.	- Will not reduce noise and dust.	Neither option will reduce noise and dust, but Option 2 is more likely to generate dust.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Will contribute to the provision of minerals to meet the needs of society.	+ Will contribute to the provision of minerals to meet the needs of society.	Both options would contribute to meeting the needs of society.
13. Promote economic development and job creation	+ Will contribute to economic development and sustain employment levels.	+ Will contribute to economic development and sustain employment levels.	Both options would contribute to economic development.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	0 Neutral.	0 Neutral.	No significant generation of waste.
Option 1 is likely to have greater adverse impact on landscape and water resources than Option 2, but could provide opportunities for flood alleviation. Both options have potential to create new landscapes.			

AS 5: If further provision of land won sand and gravel is necessary, which of the following approaches is preferred?

Sustainability Objectives	Extensions to existing quarries	New sites	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Extensions to existing quarries are likely to have negative impacts on biodiversity.	- New sites are likely to have negative impacts on biodiversity.	Although both options would not conserve and enhance biodiversity, extensions (Option 1) would be in an area that has already been disturbed.
2. Protect and enhance landscape and coast	- Extensions to existing quarries are likely to have negative impacts on landscape.	- New sites are likely to have negative impacts on landscape.	Although both options would not protect and enhance landscape, extensions (Option 1) would be in an area that has already been disturbed and therefore likely to have a lower adverse impact on landscape.
3. Protect cultural heritage	N/A	N/A	No direct relationship.
4. Protect water resources	- Will not protect water resources.	- Will not protect water resources.	Neither option would protect water resources, but Option 2 is likely to have a greater adverse impact.
5. Maintain soil quality	- Will not maintain soil quality.	- Will not maintain soil quality.	Neither option would maintain soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	Either option could provide an opportunity for flood alleviation or conversely increase the risk of flooding.
7. Improve air quality	- Will not improve air quality.	- Will not improve air quality.	Neither option will improve air quality.
8. Conserve and safeguard mineral resources	- Extraction will reduce mineral resources.	- Extraction will reduce mineral resources.	Neither option will conserve mineral resources.
9. Improve health	- Health will not be improved.	- Health will not be improved.	Neither option will improve health.

Sustainability Objectives	Extensions to existing quarries	New sites	Assessment
10. Reduce noise and dust and improve quality of life	- Will not reduce noise and dust.	- Will not reduce noise and dust.	Neither option will reduce noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Will contribute to the provision of minerals to meet the needs of society.	+ Will contribute to the provision of minerals to meet the needs of society.	Both options would contribute to meeting the needs of society.
13. Promote economic development and job creation	+ Will contribute to economic development and sustain employment levels.	+ Will contribute to economic development and sustain employment levels.	Both options would contribute to economic development.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	0 Neutral.	0 Neutral.	No significant generation of waste.
Option 1 would reduce the need to open up new areas, but prolong any adverse impacts from existing operations.			

AS 6: Is the MCS the appropriate document in which to make provision for construction and demolition waste recycling facilities?

*There is no need to appraise this issue as this question is for the purpose of obtaining the views of stakeholders.*

AS 7: If the MCS makes provision for construction and demolition waste recycling facilities, which is the preferred type of location for such facilities?

*Explanatory Note: Assessment takes no account of the benefits of construction and demolition waste recycling.*

Sustainability Objectives	Option 1: Quarries	Option 2: Industrial Estates	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	0 Neutral.	0 Neutral.	No significant effects.
2. Protect and enhance landscape and coast	- Potential adverse visual impact on landscape.	- Potential adverse visual impact on landscape.	Neither option will protect or enhance landscape. Option 1 could have limited adverse impact if the facility is located at low level and out of sight. Option 2 is likely to have limited adverse impact on landscape if within a building.
3. Protect cultural heritage	N/A	N/A	No direct relationship.
4. Protect water resources	- Potential risk to water resources.	0 Neutral.	Bringing construction and demolition waste into a quarry (Option 1) carries possible risk of contamination.
5. Maintain soil quality	N/A	N/A	No direct relationship.
6. Limit risk of flooding	N/A	N/A	No direct relationship.
7. Improve air quality	- Will increase traffic movements and dust and therefore reduce air quality.	- Will increase traffic movements and dust and therefore reduce air quality.	The greater distances likely to be travelled taking material to and from quarries (Option 1) will lead to greater adverse impact on air quality.
8. Conserve and safeguard mineral resources	N/A	N/A	No direct relationship. Recycling, wherever it takes place, will conserve mineral resources.

Sustainability Objectives	Option 1: Quarries	Option 2: Industrial Estates	Assessment
9. Improve health	- Health will not be improved.	- Health will not be improved.	Neither option will improve health.
10. Reduce noise and dust and improve quality of life	- Will not reduce noise and dust.	- Will not reduce noise and dust.	Option 2 may have a greater impact through noise and dust in an urban area as more people are likely to be affected.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	N/A	N/A	No direct relationship. Recycling, wherever it takes place, will contribute to supply of minerals.
13. Promote economic development and job creation	N/A	N/A	Both options will create jobs. Option 1 may be advantageous by creating jobs in rural areas.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	N/A	N/A	Recycling, wherever it takes place, will reduce waste.
Option 1 has greater adverse impacts on the environment through longer distances travelled but the facility is likely to be further from people and have more opportunities to be hidden from view.			

## Purbeck Stone (Chapter 6 of the Issues and Options Report)

### Assumptions

1. Extraction of Purbeck Stone gives rise to environmental impacts
2. There is a market for Purbeck Stone and there will be a continued need for Purbeck Stone during the Plan period
3. Purbeck Stone is a mineral of national importance
4. There has been a marked change in the scale and processing of Purbeck Stone
5. The importation of stone, foreign to Purbeck quarries, gives rise to associated impacts from additional traffic movements
6. The importation of stone, foreign to Purbeck quarries, gives rise to associated visual impacts from the storage of stone
7. Through the importation of stone, foreign to Purbeck, local jobs are likely to be maintained
8. The importation of stone, foreign to Purbeck, is unlikely to effect the extraction levels of indigenous Purbeck Stone
9. Reduction of Purbeck Stone extraction would not lead to increased importation of foreign stone to the quarries
10. Utilising imported foreign stone will have a significantly larger carbon footprint than sourcing stone locally
11. Where foreign stone is imported it will not be stored on undisturbed land.
12. Promoting a wider range of uses for Purbeck Stone including use as crushed rock will lead to an overall increase in output.
13. Use of Purbeck Stone waste and overburden as aggregate will compromise restoration.
14. Crushing Purbeck Stone adds to the negative impacts of quarrying
15. There are options available regarding the location of processing plants associated with Purbeck Stone extraction
16. The only practical method of transporting Purbeck Stone within the area is by vehicle rather than by conveyor.
17. Purbeck Stone can only produce low quality crushed rock

PK 1: Should the MCS support the provision of additional reserves of Purbeck Stone during the plan period?

Sustainability Objectives	Option 1: The MCS should support the provision of additional reserves of Purbeck Stone during the plan period	Option 2: The MCS should not support the provision of additional reserves of Purbeck Stone during the plan period	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on exiting habitats during extraction but potential opportunity to increase biodiversity in long term. Positive impact on geodiversity.	0 Neutral, however no opportunity to enhance geodiversity as a result of new excavations.	Option 1 would have a negative impact on biodiversity. The provision of additional reserves would enhance geodiversity.

Sustainability Objectives	Option 1: The MCS should support the provision of additional reserves of Purbeck Stone during the plan period	Option 2: The MCS should not support the provision of additional reserves of Purbeck Stone during the plan period	Assessment
2. Protect and enhance landscape and coast	- Adverse impact on landscape, minimal impact on coast.	0 Neutral.	The provision of additional reserves of Purbeck Stone will have a negative impact on the landscape.
3. Protect cultural heritage	+ Continued support of traditional building materials locally and nationally.	- Eventual loss of traditional building materials.	Option 1 supports cultural heritage through the continued provision of traditional building materials.
4. Protect water resources	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	- Removal of soil has negative impact.	+ Soil quality would be maintained.	Option 2 supports the maintenance of soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects
7. Improve air quality	- Dust and traffic movements reduce air quality.	+ Eventually improve air quality as a result of cessation of quarrying activities.	Option 2 eventually improves air quality.
8. Conserve and safeguard mineral resources	- Continued extraction will reduce mineral resources.	+ By not making provision for further reserves mineral resources will be conserved.	Option 2 conserves mineral resources.
9. Improve health	0 Neutral, as positive and negative impacts are marginal.	0 Neutral, as positive and negative impacts are marginal.	Both options have no significant impact on health.
10. Reduce noise and dust and improve quality of life	- Continued quarrying would not reduce noise and dust.	+ Eventual cessation of quarrying would reduce noise and dust.	Option 2 would eventually have a positive impact.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	Neither option refers to transportation.

Sustainability Objectives	Option 1: The MCS should support the provision of additional reserves of Purbeck Stone during the plan period	Option 2: The MCS should not support the provision of additional reserves of Purbeck Stone during the plan period	Assessment
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Continued provision would be likely to satisfy society's needs for Purbeck Stone.	- The lack of additional provision would eventually result in failure to meet society's needs for Purbeck Stone.	Option 1 provides the opportunity for an appropriate and sustainable supply of Purbeck Stone for society's needs.
13. Promote economic development and job creation	+ Supports traditional stone masonry skills and local economy.	- Decline and eventual loss of traditional masonry skills.	Option 1 supports local traditional skills and local economy.
14. Promote public involvement	N/A	N/A	Neither option relates to the promotion of public involvement.
15. Minimise waste	- Continued provision could create additional mineral waste.	+ Restriction of future provision could maximise the use of the existing Purbeck Stone reserves.	Option 2 may lead to less waste being produced.
The provision of additional reserves (Option 1) supports the supply of Purbeck Stone in terms of economic, social and cultural benefits. Making no additional provision of reserves (Option 2) has, in most cases, environmental benefits.			

PK 2: Do you consider that the visual impact of current quarrying operations in Purbeck is a significant issue?

*There is no need to appraise this issue as this question is for the purpose of obtaining the views of stakeholders.*

PK 3: Should Purbeck Stone workings be screened by mounds or left open to view?

Sustainability Objectives	Option 1: Screening should be encouraged	Option 2: Screening should be discouraged	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Would not retain and conserve existing habitats but may create opportunity for diverse habitats on the mounds themselves.	+ Would retain and conserve existing habitats.	Creation of screening mounds (Option 1) will have a negative impact if existing habitats are destroyed but may create different habitats on the mounds themselves, Option 2 would retain existing habitats.
2. Protect and enhance landscape and coast	- Mounds could look out of place within the traditional landscape although quarry workings would be screened.	- Lack of mounds would leave quarry workings open to view but would not impact on the traditional landscape.	Both options have negative impacts on the traditional landscape.
3. Protect cultural heritage	0 Neutral.	0 Neutral.	No significant effects.
4. Protect water resources	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	- Loss of soil quality beneath mounds.	+ Maintenance of soil quality.	Option 2 will maintain soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	0 Neutral.	0 Neutral.	No significant effects.
8. Conserve and safeguard mineral resources	0 Neutral.	0 Neutral.	No significant effects.
9. Improve health	0 Neutral.	0 Neutral.	No significant effects.
10. Reduce noise and dust and improve quality of life	+ Mounds can reduce noise and dust.	- Lack of mounds will not reduce noise and dust.	Option 1 is more likely to reduce noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Screening should be encouraged	Option 2: Screening should be discouraged	Assessment
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	N/A	N/A	No direct relationship.
13. Promote economic development and job creation	N/A	N/A	No direct relationship.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	0 Neutral.	0 Neutral.	No significant effects.
Option 1 has marginally more disadvantages over Option 2 including impacts on the traditional landscape whilst Option 2 has the advantage of reducing dust and noise.			

PK 4: Is the move away from traditional quarrying to intensive extraction acceptable?

Sustainability Objectives	Option 1: Revert to more traditional, dispersed and scattered extraction sites	Option 2: Favour the expansion of existing extraction sites through extensions	Option 3: Favour the concentration of Purbeck Stone extraction in one part of Purbeck	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Scattered distribution of extraction sites is likely to have a negative impact on biodiversity.	- Extensions of existing extraction sites are likely to have a negative impact on biodiversity.	- Concentration of extraction in one part of Purbeck is likely to have a negative impact on biodiversity.	Although all options have a negative impact during extraction they do create opportunities for the enhancement of biodiversity/geodiversity in due course. Option 1 is more likely to provide the greatest opportunity for diversity.
2. Protect and enhance landscape and coast	- Scattered distribution of extraction sites is likely to have a negative impact on landscape.	- Extensions can create an adverse effect on landscape and landform however extensions can also reduce the adverse impact on landscape through the management of overburden.	- Concentration in one area could create more prominent adverse impacts on landscape.	Scattered and dispersed extraction sites (Option 1) may be less visually intrusive than the other two options. Option 2 may have benefits in terms of managing the issue of excessive overburden mounds.
3. Protect cultural heritage	+ Supports the provision of traditional building stone.	+ Supports the provision of traditional building stone.	+ Supports the provision of traditional building stone.	All options support the protection of cultural heritage by providing for continued supply.
4. Protect water resources	0 Neutral, unlikely to have an adverse impact on water resources.	0 Neutral, unlikely to have an adverse impact on water resources.	- Concentration in one part of Purbeck may create adverse effects on water resources because of the size and scale of the	Concentrated extraction may cause more adverse impact on water resources than the other two options because of the scale and

Sustainability Objectives	Option 1: Revert to more traditional, dispersed and scattered extraction sites	Option 2: Favour the expansion of existing extraction sites through extensions	Option 3: Favour the concentration of Purbeck Stone extraction in one part of Purbeck	Assessment
			operation.	intensity of the operation.
5. Maintain soil quality	- Removal of soil has negative impact.	- Removal of soil has negative impact.	- Removal of soil has negative impact.	Each option has negative impact on soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	- Scattered and dispersed extraction sites may increase vehicle movements but may reduce the concentration of dust.	0 Marginal change from the current situation.	- Concentrated workings may give rise to intensified local impacts.	Option 2 has least risk of increasing adverse impacts on air quality.
8. Conserve and safeguard mineral resources	- Continued extraction would reduce mineral resources.	- Continued extraction would reduce mineral resources.	- Continued extraction would reduce mineral resources.	None of the options would conserve and safeguard Purbeck Stone.
9. Improve health	0 Neutral, as positive and negative impacts are marginal.	0 Neutral, as positive and negative impacts are marginal.	0 Neutral as negative impacts of concentrated working may be offset by fewer residents being affected.	None of the options would have any significant impact on health.
10. Reduce noise and dust and improve quality of life	- Continued quarrying would not reduce noise and dust.	- Continued quarrying would not reduce noise and dust.	- Continued quarrying would not reduce noise and dust.	None of the options reduce noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	N/A	None of the options relates to sustainable ways of transportation.
12. Provide appropriate and sustainable supply of minerals to meet the	+ Scattered and dispersed extraction sites would be likely to satisfy society's	+ Extension of existing sites would be likely to satisfy society's needs for	+ Concentrated extraction sites would be likely to satisfy society's needs for	Each option would be likely to satisfy society's needs for Purbeck Stone.

Sustainability Objectives	Option 1: Revert to more traditional, dispersed and scattered extraction sites	Option 2: Favour the expansion of existing extraction sites through extensions	Option 3: Favour the concentration of Purbeck Stone extraction in one part of Purbeck	Assessment
needs of society	needs for Purbeck Stone.	Purbeck Stone.	Purbeck Stone.	
13. Promote economic development and job creation	+ Supports the local economy and maintains employment in traditional masonry skills.	+ Supports the local economy and maintains employment in traditional masonry skills.	+ Supports the local economy and maintains employment in traditional masonry skills.	Each option would be likely to contribute to local economic development and maintain traditional skills.
14. Promote public involvement	N/A	N/A	N/A	None of the options relates to public involvement.
15. Minimise waste	N/A	N/A	N/A	None of the options relates to minimise waste.
None of the options performs significantly better than the others although Option 1 provides greater opportunities for increasing biodiversity and geodiversity, Option 2 may reduce visual impact of overburden storage and Option 3 may have more adverse impact on landscape.				

PK 5: Should support be given to the importation of stone to Purbeck quarries from overseas to supplement local traditional building stone operations?

Sustainability Objectives	Option 1: Encourage the importation of foreign stone	Option 2: Discourage the importation of foreign stone	Option 3: Provide no policy guidance on importation of foreign stone in the MCS	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	N/A	N/A	N/A	No direct relationship.
2. Protect and enhance landscape and coast	- Potential negative impact of stockpiles and associated activity.	+ Potential positive impact by reducing stockpiles and associated activity.	- Potential negative impact if the importation of foreign stone is left to market	Option 2 is more likely to protect landscape.

Sustainability Objectives	Option 1: Encourage the importation of foreign stone	Option 2: Discourage the importation of foreign stone	Option 3: Provide no policy guidance on importation of foreign stone in the MCS	Assessment
			forces.	
3. Protect cultural heritage	- Imported stone will not maintain cultural heritage.	+ Cultural heritage associated with Purbeck Stone production and masonry skills is more likely to be maintained.	- Potential negative impact if the importation of foreign stone is left to market forces.	Option 2 is more likely to protect cultural heritage.
4. Protect water resources	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	- Importation of foreign stone will increase lorry traffic into the area and increase air pollution.	+ Fewer lorry movements of imported stone will reduce air pollution.	- Potential negative impact if the importation of foreign stone is left to market forces.	Option 2 will result in fewer lorry movements and improve air quality.
8. Conserve and safeguard mineral resources	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
9. Improve health	- Importation of foreign stone will increase lorry traffic into the area and may be detrimental to health.	+ Reduced air pollution resulting from fewer lorry movements of imported stone may improve health.	- Potential negative impact if the importation of foreign stone is left to market forces.	Option 2 is more likely to improve health through reducing air pollution.
10. Reduce noise and dust and improve quality of life	- Importation of foreign stone will increase noise and dust from lorry traffic.	+ Discouragement of importation of foreign stone will decrease noise and dust from lorry traffic.	- Left to market forces importation of foreign stone could potentially increase noise and dust from lorry traffic.	Option 2 is more likely to reduce noise and dust.
11. Encourage and facilitate sustainable	- Increased lorry movements of imported	- Even though this option reduces lorry movements	- Providing no guidance does not encourage	None of the options encourage and facilitate

Sustainability Objectives	Option 1: Encourage the importation of foreign stone	Option 2: Discourage the importation of foreign stone	Option 3: Provide no policy guidance on importation of foreign stone in the MCS	Assessment
methods of transporting minerals	stone into the area does not encourage sustainable ways of transportation.	into the area it would not encourage sustainable ways of transportation.	sustainable ways of transportation.	sustainable ways of transportation.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Increased importation of stone into the area would increase supply and choice of stone to meet society's needs.	- Reduced importation of stone into the area might reduce supply and choice of stone to meet society's needs.	+ If left to market forces the needs of society are likely to be met.	Discouraging the importation of foreign stone (Option 2) is least likely to meet society's needs and provide choice to the consumer. However imported stone would continue to be available at other locations.
13. Promote economic development and job creation	+ Importation of stone in addition to local production may promote economic development locally if local extraction continues.	- Discouraging importation of stone may impact adversely on the local economy and reduce local employment levels.	+ If left to market forces importation is likely to benefit the local economy and support local employment.	Discouraging the importation of foreign stone (Option 2) is most likely to impact adversely on the local economy.
14. Promote public involvement	N/A	N/A	N/A	No direct relationship.
15. Minimise waste	- There will be waste packaging, etc. associated with the importation of foreign stone.	+ There will be a reduction of waste packaging, etc. if imports of foreign stone decline.	- If left to market forces importation of foreign stone is likely to increase as will the level of associated waste.	Discouraging the importation of foreign stone (Option 2) is most likely to reduce waste.
Overall the discouragement of importing foreign stone is beneficial in environmental terms but could be detrimental to the local economy.				

PK 6: The current policy approach discourages non traditional uses of Purbeck Stone. Which of the following options is most appropriate?

Sustainability Objectives	Option 1: Promote the extraction of Purbeck Stone for traditional purposes only	Option 2: Promote the extraction of Purbeck Stone for a wide range of uses including the crushing of stone for aggregate purposes	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Negative impact on exiting habitats during extraction but potential opportunity to increase biodiversity in long term. Positive impact on geodiversity.	- Negative impact on exiting habitats during extraction but potential opportunity to increase biodiversity in long term. Positive impact on geodiversity.	Both options have negative impacts.
2. Protect and enhance landscape and coast	- Negative impact on landscape, minimal impact on coast.	- Negative impact on landscape, minimal impact on coast. Due to the very nature of aggregate production there may well be increased impacts on the landscape.	Both options have negative impacts. Option 2 is likely to have greater adverse impact on the landscape due to higher levels of production, associated plant and machinery and difficulties in achieving satisfactory restoration.
3. Protect cultural heritage	+ Enables the continued supply of traditional materials for the construction and maintenance of buildings, monumental stone and ecclesiastical purposes. Continuation of local masonry skills.	+ Enables the continued supply of traditional materials for the construction and maintenance of buildings, monumental stone and ecclesiastical purposes. Continuation of local masonry skills.	As long as Option 2 does not lead to the use of building stone as aggregate, both options protect cultural heritage.
4. Protect water resources	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	0 Neutral.	0 Neutral.	No significant effects.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	0 Neutral	- Increased level of extraction would lead to additional dust and air pollution from processing and traffic.	Option 2 would have a detrimental impact on air quality.
8. Conserve and	- Continued extraction will reduce	- Increased extraction will reduce	Both options will reduce mineral

Sustainability Objectives	Option 1: Promote the extraction of Purbeck Stone for traditional purposes only	Option 2: Promote the extraction of Purbeck Stone for a wide range of uses including the crushing of stone for aggregate purposes	Assessment
safeguard mineral resources	mineral resources.	mineral resources.	resources but Option 2 will reduce mineral resources more quickly.
9. Improve health	0 Neutral.	- Increased level of extraction would lead to additional dust and air pollution from processing and traffic.	Option 2 would have a detrimental impact on air quality and therefore health.
10. Reduce noise and dust and improve quality of life	0 Neutral.	- Increased level of extraction would lead to additional dust and noise from processing and traffic.	Option 2 would increase noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	- Does not actively encourage and facilitate sustainable ways of transportation	+ Producing crushed rock products for the local market can reduce the distance that similar materials would otherwise have to travel.	Option 2 offers limited potential to reducing delivery distance of crushed rock.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Enables the continued supply of traditional materials to meet the needs of society.	+ Enables the continued supply of traditional materials and limited supply of aggregates to meet the needs of society.	Both options meet society's need for Purbeck Stone but Option 2 also provides a limited supply of aggregates.
13. Promote economic development and job creation	+ Supports the local economy and maintains employment in traditional masonry skills.	+ Supports the local economy and maintains employment in traditional masonry skills and may create limited additional jobs.	Both options would be likely to contribute to local economic development and maintain traditional skills. Option 2 may create limited additional jobs.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	0 Neutral	+ Encourages the limited use of material that would otherwise be backfilled.	Option 2 would marginally reduce waste.

Generally, Option 1 performs better in relation to environmental objectives, whereas Option 2, through increased extraction and use of material performs better economically.

PK 7: Currently restoration of most Purbeck Stone quarries is by backfilling to near original ground level with unsuitable building stone and processing waste, despite much of this material being capable of use as aggregate. Should Purbeck Stone quarries continue to be restored in this way or could they be restored at a lower level using less backfill material?

Sustainability Objectives	Option 1: Retain all waste stone on site, for use as backfill to restore to near original ground levels?	Option 2: Retain only some waste stone on site to restore to a lower ground level?	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	+ Creation of habitats close to the original. Reduced opportunity for geodiversity.	+ Potential to create diverse habitats and good potential for geodiversity.	Option 2 would provide more opportunity for enhancing biodiversity and geodiversity.
2. Protect and enhance landscape and coast	+ Restoration to near original ground levels will protect landscape.	- Restoration at lower levels will alter landscape.	Option 1 is more likely to protect the landscape.
3. Protect cultural heritage	0 Neutral.	0 Neutral.	No significant effects.
4. Protect water resources	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	0 Neutral.	0 Neutral.	No significant effects.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	- Minimal impact.	- Minimal impact.	Minimal negative impact associated with both options.
8. Conserve and safeguard mineral resources	+ Retained stone in backfill may be used in the future.	- Minimal stone likely to be retained in backfill for use in the future.	Option1 provides the opportunity for future extraction of stone from backfill.
9. Improve health	0 Neutral.	0 Neutral.	No significant effects.
10. Reduce noise and dust and improve quality of life	0 Neutral.	0 Neutral.	No significant effects.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Retain all waste stone on site, for use as backfill to restore to near original ground levels?	Option 2: Retain only some waste stone on site to restore to a lower ground level?	Assessment
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	- Retaining stone within backfill results in a reduced supply of minerals to meet needs of society.	+ Maximises use of extracted stone.	Option 2 maximises the supply of stone to meet the needs of society.
13. Promote economic development and job creation	0 Neutral.	0 Neutral.	No significant effects.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	- No opportunity for making use of unsuitable stone and processing waste.	+ Maximising the use of extracted stone.	Option 2 minimises waste by maximising use of extracted stone.
Option 1 is more likely to protect the landscape; however Option 2 has wider benefits including minimising waste and opportunities for greater biodiversity and geodiversity.			

PK 8: Should stone processing be limited to the site from which the stone has been sourced?

Sustainability Objectives	Option 1: Encourage stone processing to take place on the site from which it is extracted	Option 2: Encourage the use of central service areas	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Processing on site in addition to extraction could increase negative impacts on biodiversity.	- The use of central service areas could increase negative impacts on biodiversity due to the movement of material between the quarries and the service areas.	Whilst both options have potential negative impacts Option 2 may have a greater impact on biodiversity due to the associated movements of unprocessed material.
2. Protect and enhance landscape and coast	- Processing on site will not protect or enhance landscape and coast.	- Central service areas are likely to have a significant visual impact and will not protect and enhance	It is likely that Option 2 would have the greater adverse impact on landscape and coast through

Sustainability Objectives	Option 1: Encourage stone processing to take place on the site from which it is extracted	Option 2: Encourage the use of central service areas	Assessment
		landscape and coast.	the scale of development.
3. Protect cultural heritage	+ Supports the provision of traditional building stone and reflects traditional working methods.	+ Supports the provision of traditional building stone.	Both options will provide a continued supply of traditional building stone. Option 1 reflects a more traditional style of working.
4. Protect water resources	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	0 Neutral.	- May have adverse negative impact on soil quality if new service areas are developed.	Option 2 may have a greater impact on soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	- Dust from a greater number of processing units may affect air quality, although the small scale operations may limit adverse impacts.	- Concentrated processing and additional transportation may give rise to intensified local impacts on air quality. However processing is likely to be enclosed within a building and impacts could thereby be minimised.	Neither option will improve air quality but Option 2 may have the greater impact if additional vehicle movements are required. Option 2 offers a greater chance of processing operations taking place within a building.
8. Conserve and safeguard mineral resources	N/A	N/A	No direct relationship.
9. Improve health	- May have a detrimental effect on health through reduced air quality.	- May have a detrimental effect on health through reduced air quality.	Both options may have a limited adverse impact on health.
10. Reduce noise and dust and improve quality of life	- Will not reduce noise and dust.	- Will potentially intensify noise and dust levels, although central service areas are likely to be enclosed.	Neither option reduces noise and dust. Option 2 offers a greater chance of processing operations taking place within a building.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Encourage stone processing to take place on the site from which it is extracted	Option 2: Encourage the use of central service areas	Assessment
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	N/A	N/A	No direct relationship.
13. Promote economic development and job creation	N/A	N/A	No direct relationship.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	N/A	N/A	No direct relationship.
Option 1 performs better overall in terms of landscape, biodiversity and cultural heritage. Option 2 has greater potential for the control of dust and noise levels but may have greater visual impact and increase traffic movements.			

## Portland Stone (Chapter 7 of the Issues and Options Report)

### Assumptions

1. Extraction of Portland Stone [for both building stone and crushed rock] gives rise to environmental impacts
2. There are sufficient reserves of both building stone and crushed rock to meet demand during the Plan period
3. No new applications will be permitted unless they are in substitution for existing reserves (reserve swap)
4. There is a market for the building stone and this will continue throughout the Plan period
5. The building stone is a mineral of national importance
6. Extraction gives rise to transportation issues
7. Extraction gives rise to visual issues
8. There are environmental benefits of underground mining compared with surface extraction
9. There is no land without permission for extraction on Portland considered suitable for future opencast quarrying
10. Any new reserves will be worked by underground mining
11. Crushing Portland Stone increases the negative impacts of quarrying
12. The extraction of the cherty series below the building stone is the greatest cause of adverse environmental impact
13. Crushing Portland Stone benefits the local economy
14. Portland Port would be capable of exporting Portland Stone

PD 1: Should the MCS encourage underground mining as an alternative to working existing permitted reserves of Portland Stone during the plan period?

Sustainability Objectives	Option 1: Continue working the current permitted reserves of Portland Stone even if these have significant impacts.	Option 2: The MCS should encourage alternative reserves worked by underground mining, in less sensitive areas, in exchange for existing permitted reserves.	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on exiting habitats. Possible positive impact on geodiversity.	+ Biodiversity will be protected and conserved.	Promoting the exchange (Option 2) of permitted minerals reserves within sensitive environmental areas for reserves within alternative areas worked by underground mining will protect

Sustainability Objectives	Option 1: Continue working the current permitted reserves of Portland Stone even if these have significant impacts.	Option 2: The MCS should encourage alternative reserves worked by underground mining, in less sensitive areas, in exchange for existing permitted reserves.	Assessment
			and conserve biodiversity.
2. Protect and enhance landscape and coast	- Adverse impact on landscape and coast.	+ Landscape will be protected.	Promoting the exchange (Option 2) of permitted minerals reserves within sensitive environmental areas for reserves within alternative areas worked by underground mining will protect landscape.
3. Protect cultural heritage	+ Continued support of traditional building materials locally and nationally and continuation of local masonry skills.	+ Continued support of traditional building materials locally and nationally and continuation of local masonry skills.	Both Option 1 and 2 support cultural heritage through the continued provision of traditional building materials and continuation of local masonry skills.
4. Protect water resources	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	- Removal of soil has a negative impact.	- Minimal impact on soil resources.	Option 2 is more likely to maintain soil quality some impact on soil quality through mine development.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	- Dust and traffic movements reduce air quality.	- Dust and traffic movements reduce air quality. Possible reduced traffic movements.	Option 2 will reduce dust as there will be less movement of overburden on site. Traffic movements from mining will be reduced as crushing will cease.
8. Conserve and safeguard mineral resources	- Continued extraction will reduce mineral resources.	- Continued extraction will reduce mineral resources however un-worked beds will be retained in	Option 2 is more likely to conserve some mineral resource.

Sustainability Objectives	Option 1: Continue working the current permitted reserves of Portland Stone even if these have significant impacts.	Option 2: The MCS should encourage alternative reserves worked by underground mining, in less sensitive areas, in exchange for existing permitted reserves.	Assessment
		the ground.	
9. Improve health	0 Neutral, as positive and negative impacts are marginal.	+ The benefits of underground mining will improve health.	Option 2 is more likely to improve health.
10. Reduce noise and dust and improve quality of life	- Continued quarrying would not reduce noise and dust.	+ The benefits of underground mining will reduce noise and dust and improve quality of life.	Option 2 is more likely to reduce noise and dust and improve quality of life.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Continued extraction will meet the needs of society.	0 Continued extraction of dimension stone will meet the needs of society however there will be no crushed rock.	Option 1 is more likely to meet the society's need for dimension stone and crushed rock.
13. Promote economic development and job creation	0 Neutral, continued levels of employment and contribution to local economy.	- Possible impact on the economy and employment levels through the cessation of crushed rock production.	Option 1 will ensure continued levels of employment and contribution to local economy.
14. Promote public involvement	N/A	N/A	Neither option relates to the promotion of public involvement.
15. Minimise waste	- Continued extraction of mineral in the traditional way would create mineral waste.	+ Potential to minimise the production of waste.	Option 2 will minimise waste.
Option 2 performs best environmentally and conserves mineral that will otherwise be used for low grade construction aggregate to the detriment of the environment. Option 1 is more likely to meet society's needs for both dimension stone and crushed rock however to the detriment of the environment and society.			

PD 2: Is it appropriate to crush material unsuitable as building stone?

Sustainability Objectives	Option 1: It is not appropriate to crush any Portland Stone extracted	Option 2: It is appropriate to crush material unsuitable as building stone other than the cherty series	Option 3: It is appropriate to crush material unsuitable as building stone including material from the cherty series	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on existing habitats.	- Adverse impact on existing habitats.	- Adverse impact on existing habitats and restoration may be delayed.	None of the options protect, conserve or enhance biodiversity. Options 1 and 2 provide better opportunity for earlier restoration.
2. Protect and enhance landscape and coast	- Potential adverse impact on landscape from piles of waste stone.	- Adverse impact on landscape.	- Adverse impact on landscape and coast if quarries are deepened to extract cherty series for crushing.	All options fail to protect and enhance landscape and coast. Option 2 has the least detrimental impact on landscape and coast as quarries will not be deepened and there will not be piles of waste stone.
3. Protect cultural heritage	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
4. Protect water resources	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	+ Cessation of crushing would reduce dust and lorry movements.	- Crushing can give rise to dust and results in additional lorry movements.	- Crushing can give rise to dust and results in additional lorry movements. Crushing the cherty series	Option 1 would have a positive effect on air quality if current crushing is stopped. Option 3 would

Sustainability Objectives	Option 1: It is not appropriate to crush any Portland Stone extracted	Option 2: It is appropriate to crush material unsuitable as building stone other than the cherty series	Option 3: It is appropriate to crush material unsuitable as building stone including material from the cherty series	Assessment
			will increase and/or prolong the activity.	give rise to the most dust and lorry movements.
8. Conserve and safeguard mineral resources	+ Cessation of crushing will conserve mineral resources.	- Continued extraction will reduce mineral resources.	- Continued extraction will reduce mineral resources	Option 1 will conserve mineral resources to a greater extent than Option 2 and 3.
9. Improve health	+ Cessation of crushing would reduce dust and lorry movements and improve health.	- Crushing can give rise to dust and results in additional lorry movements.	- Crushing can give rise to dust and results in additional lorry movements.	Option 1 would improve health. Option 3 would have the most detrimental effect on health.
10. Reduce noise and dust and improve quality of life	+ Cessation of crushing would reduce dust and noise.	- Crushing can give rise to dust and noise.	- Crushing can give rise to dust and noise.	Option 1 will reduce noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Will allow the continued provision of building stone to meet the needs of society but will not provide material for aggregate purposes.	+ Will allow the continued provision of building stone to meet the needs of society and provide material for aggregate purposes.	+ Will allow the continued provision of building stone to meet the needs of society and provide material for aggregate purposes.	All options meet the need for building stone. Options 2 and 3 additionally provide material for aggregate purposes.
13. Promote economic development and job creation	- Cessation of crushing would result in fewer jobs and a negative impact on the local economy.	+ Continued crushing would contribute to the local economy.	+ Continued crushing would contribute to the local economy.	Option 2 and 3 would contribute to the local economy.

Sustainability Objectives	Option 1: It is not appropriate to crush any Portland Stone extracted	Option 2: It is appropriate to crush material unsuitable as building stone other than the cherty series	Option 3: It is appropriate to crush material unsuitable as building stone including material from the cherty series	Assessment
14. Promote public involvement	N/A	N/A	N/A	No direct relationship.
15. Minimise waste	- No opportunity to use waste stone.	+ Waste stone will be used.	+ Waste stone will be used.	Option 2 and 3 provides the opportunity for utilising waste stone.
Option 1 provides benefits including reduction of lorry movements and crushing activity. Option 2 and 3 do have economic benefits and enable continued supply of aggregate materials. Option 3 will give rise to restoration and landform difficulties if quarries are deepened to remove stone from the cherty series.				

PD 3: Is there an opportunity to alleviate the problem of quarry related traffic having to pass through Fortuneswell?

Sustainability Objectives	Option 1: Provide a lorry route down the incline and through Portland Port in order to avoid Fortuneswell	Option 2: Continue using present route through Fortuneswell	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Adverse impact on biodiversity and ecologically sensitive areas along the route of the incline.	0 No change from present impacts	Option 1 is likely to have an adverse impact on designated areas.
2. Protect and enhance landscape and coast	- Development and use of the incline for lorry traffic would adversely affect landscape and coast.	0 No change from present impacts	Option 1 is likely to have an adverse impact on landscape and coast.
3. Protect cultural heritage	0 Neutral.	0 Neutral.	No significant effects.
4. Protect water resources	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	- Removal of soil through	0 No change from present	Option 1 will have limited

Sustainability Objectives	Option 1: Provide a lorry route down the incline and through Portland Port in order to avoid Fortuneswell	Option 2: Continue using present route through Fortuneswell	Assessment
	construction of the road will have limited negative impact.	impacts.	negative impact on soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	+ Air quality would be improved in Fortuneswell. However limited adverse impact along new route.	- There will be no improvement in air quality if present arrangements continue.	Option 1 would improve air quality over the current situation.
8. Conserve and safeguard mineral resources	N/A	N/A	No direct relationship.
9. Improve health	+ Health would be improved in Fortuneswell. However, limited adverse impact along new route.	- There will be no improvement in health if present arrangements continue.	Option 1 would improve health over the current situation.
10. Reduce noise and dust and improve quality of life	+ Noise and dust from quarry traffic would be reduced in Fortuneswell. However, limited adverse impact along new route.	- There will be no reduction in noise and dust if present arrangements continue.	Option 1 would reduce noise and dust.
11. Encourage and facilitate sustainable methods of transporting minerals	0 Will not affect the method of transport.	0 No change from present impacts.	Neither option will encourage sustainable ways of transportation.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	0 Will not affect the supply of minerals.	0 No change from present.	Neither option will affect supply of minerals.
13. Promote economic development and job creation	+ Possible local economic benefits if the new road is opened.	- Current situation will not promote economic development.	Option 1 could benefit local economy.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Provide a lorry route down the incline and through Portland Port in order to avoid Fortuneswell	Option 2: Continue using present route through Fortuneswell	Assessment
Option1 will have benefits for health and quality of life in Fortuneswell and potentially benefit the local economy. Option1 may however have limited adverse impacts along the new route.			

PD 4: Is there an opportunity to alleviate the problem of quarry related traffic passing through Easton?

Sustainability Objectives	Option 1: Create a new lorry route through Broadcroft Quarry to by-pass Easton	Option 2: Use highway restrictions to prevent quarry traffic passing through Easton	Option 3: Continue using present route through Easton	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Possible adverse impact on biodiversity if traffic is diverted through quarry.	0 No change from present impacts.	0 No change from present impacts.	Option 1 may have an adverse impact on biodiversity.
2. Protect and enhance landscape and coast	0 No change from present impacts	0 No change from present impacts	0 No change from present impacts	None of the options will have a significant effect on landscape or coast.
3. Protect cultural heritage	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
4. Protect water resources	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
5. Maintain soil quality	0 No change from present impacts.	0 No change from present impacts.	0 No change from present impacts.	No significant effects.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	0 Neutral.	No significant effects.
7. Improve air quality	+ Air quality would be improved in Easton.	+ Air quality would be improved in Easton. However adverse impact along alternative routes.	- There will be no improvement in air quality if present arrangements	Option 1 and 2 would improve air quality in Easton over the current situation. Option 2 would reduce air quality along

Sustainability Objectives	Option 1: Create a new lorry route through Broadcroft Quarry to by-pass Easton	Option 2: Use highway restrictions to prevent quarry traffic passing through Easton	Option 3: Continue using present route through Easton	Assessment
			continue.	alternative routes.
8. Conserve and safeguard mineral resources	N/A	N/A	N/A	No direct relationship.
9. Improve health	+ Health would be improved in Easton.	+ Health would be improved in Easton. However, adverse impact along alternative routes.	- There will be no improvement in health if present arrangements continue.	Option 1 and 2 would improve health in Easton over the current situation. Option 2 would have a detrimental impact on health along alternative routes.
10. Reduce noise and dust and improve quality of life	+ Noise and dust from quarry traffic would be reduced in Easton.	+ Noise and dust from quarry traffic would be reduced in Easton. However, adverse impact along alternative route.	- There will be no reduction in noise and dust if present arrangements continue.	Option 1 and 2 would reduce noise and dust in Easton over the current situation. Option 2 would increase noise and dust along alternative routes.
11. Encourage and facilitate sustainable methods of transporting minerals	0 Will not affect the method of transport.	0 Will not affect the method of transport.	0 No change from present impacts.	None of the options will encourage sustainable ways of transportation.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	0 Will not affect the supply of minerals.	0 Will not affect the supply of minerals.	0 No change from present.	None of the options will affect supply of minerals.
13. Promote economic development and job creation	0 Will not affect the local economy.	0 Will not affect the local economy.	0 Will not affect the local economy.	None of the options will affect the local economy.

Sustainability Objectives	Option 1: Create a new lorry route through Broadcroft Quarry to by-pass Easton	Option 2: Use highway restrictions to prevent quarry traffic passing through Easton	Option 3: Continue using present route through Easton	Assessment
14. Promote public involvement	N/A	N/A	N/A	No direct relationship.
15. Minimise waste	N/A	N/A	N/A	No direct relationship.
Option1 and 2 will have benefits for health and quality of life in Easton. Option 2 may however have limited adverse impacts along the alternative routes.				

PD 5: Is visual intrusion from quarrying on Portland an issue that needs addressing in the MCS?

*There is no need to appraise this issue as this question is for the purpose of obtaining the views of stakeholders.*

## Hydrocarbons (Chapter 8 of the Issues and Options Report)

### Assumptions:

1. Extraction of oil and gas gives rise to environmental impacts
2. There is a market for oil and gas and there will be a continued need for oil and gas during the Plan period
3. Technical capabilities provide the opportunity to extract oil and gas remotely and therefore sites can be located in the least sensitive areas.
4. The high value of the mineral provides for effective mitigation to alleviate associated environmental impact.
5. Oil and gas are minerals of national importance
6. In general, production facilities are screened by nature vegetation including plantation

HY1: Should the MCS encourage further exploration and production of on-shore oil and gas during the plan period?

Sustainability Objectives	Option 1: Encourage exploration and production of hydrocarbons in Dorset within the MCS	Option 2: Resist further exploration and production of hydrocarbons in the MCS	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	- Potential adverse impact on exiting habitats but potential opportunity to increase biodiversity in long term.	0 Neutral, however no opportunity to enhance biodiversity.	Option 1 would potentially have a negative impact on biodiversity but has the potential to enhance biodiversity in the long term through habitat creation.
2. Protect and enhance landscape and coast	- Potential adverse impact on landscape and coast.	+ Potential positive impact by reducing exploration and extraction infrastructure.	Option 2 is more likely to enhance the landscape and coast.
3. Protect cultural heritage	N/A	N/A	No direct relationship.
4. Protect water resources	- Potential adverse impact on water resources.	+ Potential impact on water resources would be reduced.	Option 2 is more likely to protect water resources.
5. Maintain soil quality	- Removal of soil has a negative impact.	+ Soil quality would be maintained.	Option 2 supports the maintenance of soil quality.
6. Limit risk of flooding	0 Neutral.	0 Neutral.	No significant effects
7. Improve air quality	- Traffic movements reduce air quality.	+ Eventual improvement of air quality	Option 2 would eventually improve

Sustainability Objectives	Option 1: Encourage exploration and production of hydrocarbons in Dorset within the MCS	Option 2: Resist further exploration and production of hydrocarbons in the MCS	Assessment
		through cessation of oil extraction activities.	air quality.
8. Conserve and safeguard mineral resources	- Continued extraction will reduce mineral resources.	+ Discouraging extraction and exploration will conserve mineral resources.	Option 2 conserves mineral resources.
9. Improve health	0 Neutral as positive and negative impacts are marginal.	0 Neutral as positive and negative impacts are marginal.	Neither option has a significant impact on health.
10. Reduce noise and dust and improve quality of life	- Continued extraction would not reduce noise.	+ Eventual cessation of extraction would reduce noise.	Option 2 would eventually have a positive impact.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	+ Encouraging exploration and extraction is likely to contribute to society's needs.	- Discouraging exploration and extraction would eventually result in failure to meet society's needs.	Option 1 provides the opportunity to contribute to society's needs.
13. Promote economic development and job creation	+ Encouraging the exploration and extraction of oil and gas reserves contributes to economic development and job creation.	- Discouraging the exploration and extraction of oil and gas reserves will lead to a decline in the economy and employment levels.	Option 1 supports the economy and local jobs.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	N/A	N/A	No direct relationship.

Sustainability Objectives	Option 1: Encourage exploration and production of hydrocarbons in Dorset within the MCS	Option 2: Resist further exploration and production of hydrocarbons in the MCS	Assessment
Option 2 performs best in relation to the environment. Option 1 performs best in terms of the economy but poorly in terms of the environment. However the high value of the mineral provides for effective mitigation to alleviate associated environmental impact.			

HY2: Do you consider that there are any significant environmental impacts associated with hydrocarbon exploration and production which need to be addressed in the MCS?

HY3: Is the transportation of hydrocarbons a significant issue that needs to be addressed in the MCS?

*There is no need to appraise these issues as the questions are for the purpose of obtaining the views of stakeholders.*

## **Other Minerals (Chapter 9 of the Issues and Options Report)**

OM 1: Should the MCS make provision for further reserves of “common” clay during the plan period?

OM 2: Should the MCS make provision for reserves of chalk during the plan period?

OM 3: Should the MCS make provision for further reserves of building stone during the plan period?

*There is no need to appraise these issues as the questions are for the purpose of obtaining the views of stakeholders.*

## **Safeguarding Mineral Resources (Chapter 10 of the Issues and Options Report**

MS 1: Which potential economically viable minerals in Dorset should be safeguarded?

MS 2: Should Mineral Safeguarding Areas/Mineral Consultation Areas policy include the safeguarding of rail depot sites and marine wharves?

MS 3: Do the existing MCA's set out in the MWLP need to be revised?

MS 4: If revision of the MCA's is necessary, do you consider any areas in particular are currently inaccurate?

MS 5: If necessary, should MSA's cross mineral planning authority boundaries?

MS 6: Do you agree that MSA's should be defined irrespective of other planning/environmental designations?

*There is no need to appraise these issues as the questions are for the purpose of obtaining the views of stakeholders.*

## Restoration (Chapter 11 of the Issues and Options Report)

RN 1: Which of the strategic options for a planned approach to restoration, within Dorset, is the most appropriate?

*There is no need to appraise this issue as this question is for the purpose of obtaining the views of stakeholders.*

RN 2: If extraction is more than a few metres deep it may require infilling with suitable material but this is in increasingly short supply. What is the preferred option for restoration?

Sustainability Objectives	Option 1: Restoration to near original ground levels, using imported fill even if this extends the restoration period	Option 2: Restoration to a lower level without reliance to imported fill enabling restoration to be completed more quickly	Assessment
1. Protect, conserve and enhance biodiversity, fauna, flora and geodiversity	+ Potential to create different habitats	+ Leaving at a lower level is likely to create a new habitat.	Both options would have potential to increase biodiversity, depending on the type of restoration scheme.
2. Protect and enhance landscape and coast	+ Filling to original ground levels would reinstate landform and provide opportunity to enhance landscape through tree planting, etc.	- Permanent change to land form is likely to have negative impact on landscape.	Through the reinstatement of original ground levels Option 1 would have greater potential to enhance landscape than Option 2.
3. Protect cultural heritage	N/A	N/A	No direct relationship.
4. Protect water resources	0 Neutral	0 Neutral	Impacts on ground and surface water would depend on the circumstances of each case.
5. Maintain soil quality	0 Neutral. Whilst soil quality will not be maintained during extraction, reinstatement should allow comparable soil quality to be achieved eventually.	- Likely to be difficult to achieve comparable soil quality with restoration at lower level.	Option 1 would have minimal impact on soil quality in the longer term.
6. Limit risk of flooding	0 Neutral, although there may be	+ Could provide opportunities for	Option 2 is more likely to limit the

Sustainability Objectives	Option 1: Restoration to near original ground levels, using imported fill even if this extends the restoration period	Option 2: Restoration to a lower level without reliance to imported fill enabling restoration to be completed more quickly	Assessment
	limited circumstances where loss of groundwater storage through filling could increase flood risk.	flood alleviation and limit risk of flooding.	risk of flooding through possible opportunities for flood alleviation.
7. Improve air quality	- Additional lorry movements needed to bring in fill material would reduce air quality.	0 Neutral, restoration without fill would be unlikely to reduce air quality.	Option 2 is less likely to reduce air quality.
8. Conserve and safeguard mineral resources	N/A	N/A	No direct relationship.
9. Improve health	Additional lorry movements needed to bring in fill material will not improve health.	0 Neutral	Option1 would have an adverse impact on health through additional lorry movements.
10. Reduce noise and dust and improve quality of life	- Will not reduce noise and dust through increasing lorry movements.	0 Neutral	Option 1 would increase noise and dust through additional lorry movements.
11. Encourage and facilitate sustainable methods of transporting minerals	N/A	N/A	No direct relationship.
12. Provide appropriate and sustainable supply of minerals to meet the needs of society	N/A	N/A	No direct relationship.
13. Promote economic development and job creation	N/A	N/A	No direct relationship.
14. Promote public involvement	N/A	N/A	No direct relationship.
15. Minimise waste	N/A	N/A	No direct relationship.
Option 1 would reinstate original ground levels and land form but would increase lorry movements, reduce air quality and extend final restoration time. Option 2 would have a permanent impact on the landform but would allow for early final restoration, limit environmental effects and has potential for flood alleviation in certain circumstances.			

RN 3: Mineral extraction and restoration can provide opportunities to change previous land uses. Should such opportunities be taken?

RN 4: Do you consider that there are certain afteruses of mineral workings that should be encouraged within the policies of the MCS?

*There is no need to appraise these issues as the questions are for the purpose of obtaining the views of stakeholders.*