

**Bedfordshire County Council and Luton  
Borough Council Minerals Development  
Framework**

**Sustainability Appraisal of the Core  
Strategy Preferred Options**

**Appendix 2: Appraisal Matrices**

*ENVIRON UK Limited  
Swallow Court, Devonshire Gate,  
Tiverton, Devon , EX16 7EJ  
Tel: 01884 842 010*

## Time Period of the Plan

Option: Time Period of the Plan (2021)				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: As identified in the issues and options assessment, an end date of 2021 would require more sites to be identified than if earlier end dates were chosen. At this stage in the development of the Core Strategy, however, there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the appraisal focuses more on how the choice of time period will integrate with other planning processes and also discusses the effects on the areas likely to see development.		Short	Medium	Long
Biodiversity				
<ul style="list-style-type: none"> <li>• Include actions that directly or indirectly affect Natura 2000 sites, SSSIs or other designated sites?</li> <li>• Include actions that will cause habitat loss or fragmentation?</li> <li>• Include actions that help to reach targets or compromise targets of BAPs?</li> <li>• Include actions to ensure restoration to biodiversity is a priority where appropriate?</li> </ul>	The 2021 timeframe ties in with the East of England Plan - East of England Priority Habitat Targets which are prepared on a ten year cycle which is similar to the Local BAP timescale. This may facilitate initiatives such as site restoration planning for biodiversity.	G	G	G
Archaeology and cultural heritage				
<ul style="list-style-type: none"> <li>• Include actions that could impact upon remains, sites and monuments valued for their cultural heritage?</li> <li>• Include actions to improve education and interpretation of archaeological remains?</li> </ul>	<p>The impact on archaeology and heritage will depend on the sites finally allocated in the plan. Many of the areas where sites have been put forward are affected by archaeological constraints, notably Areas of Archaeological Interest. Therefore, there will be effects on these types of site.</p> <p><u>MITIGATION</u> It will be important to assess the impacts on archaeology and heritage once sites are allocated.</p>	Uncertain		
Landscape				
<ul style="list-style-type: none"> <li>• Cause changes to designated areas which threatens the reason for their designation?</li> <li>• Cause changes to the landscape / that (in themselves or cumulatively with other proposals) are completely at variance with the character of the area?</li> <li>• Change the number of people that are affected by the visual</li> </ul>	<p>The impact on landscape will depend on the sites finally allocated in the plan. The area in the county most sensitive in terms of landscape is the Upper Ouse Valley which is designated as an Area of Great Landscape Value. It is unlikely that sites will be allocated in this area. However, all sites will have some effects on landscape.</p> <p><u>MITIGATION</u></p>	Uncertain		

Option: Time Period of the Plan (2021)				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: As identified in the issues and options assessment, an end date of 2021 would require more sites to be identified than if earlier end dates were chosen. At this stage in the development of the Core Strategy, however, there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the appraisal focuses more on how the choice of time period will integrate with other planning processes and also discusses the effects on the areas likely to see development.		Short	Medium	Long
<ul style="list-style-type: none"> <li>impact of minerals development?</li> <li>Include actions which will enhance landscape through restoration?</li> <li>Change the amount of accessible greenspace available?</li> </ul>	It will be important to assess the impacts on landscape once sites are allocated.			
Land use				
<ul style="list-style-type: none"> <li>To what extent does the option help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).</li> </ul>	The timescale provides the opportunity to plan more effectively for the long term growth planned in the Milton Keynes and South Midlands Growth Area and support the provision of a clear, agreed sub-regional strategy for the period 2001-2021 for this growth area.	G	G	G
Air quality and noise				
<ul style="list-style-type: none"> <li>Change the amount of pollution caused by mineral working?</li> <li>Encourage suitable mitigation measures?</li> </ul>	<p>The impact on air quality and noise will depend on the sites finally allocated in the plan. However, the types of mineral development in Bedfordshire is less intrusive in terms of noise than in many areas.</p> <p><u>MITIGATION</u> It will be important to assess the impacts of air and noise pollution from traffic once sites are allocated.</p>	Uncertain		
Human health, population and social inclusion				
<ul style="list-style-type: none"> <li>Cause a change in the number of people directly affected by mineral working (living in close proximity to a mineral site or an access route) whose impact cannot be mitigated?</li> <li>Cause a cumulative impact on certain communities (either through permitting more reserves affecting the same community or by lengthening the time period of permission)?</li> </ul>	<p>Giving the plan a longer timeframe gives communities more certainty. The impact on health will depend on the sites finally allocated in the plan. However, all sites will have some impacts on communities.</p> <p><u>MITIGATION</u> It will be important to assess the impacts on communities once sites are allocated.</p>	Uncertain		
Economic growth – minerals and material assets				

Option: Time Period of the Plan (2021)				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: As identified in the issues and options assessment, an end date of 2021 would require more sites to be identified than if earlier end dates were chosen. At this stage in the development of the Core Strategy, however, there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the appraisal focuses more on how the choice of time period will integrate with other planning processes and also discusses the effects on the areas likely to see development.		Short	Medium	Long
<ul style="list-style-type: none"> <li>Help ensure that a sustainable contribution is made to the sub regional aggregate apportionment?</li> </ul>	The timescale provides the opportunity to plan more effectively for the long term growth planned in the Milton Keynes and South Midlands Growth Area and support the provision of a clear, agreed sub-regional strategy for the period 2001-2021 for this growth area.	G	G	G
Conservation and protection of water resources				
<ul style="list-style-type: none"> <li>Include actions that could increase / reduce the risk of effects on groundwater and surface water quality and quantity?</li> <li>Include measures that could increase / decrease the potential for flooding?</li> </ul>	<p>The impact on water will depend on the sites finally allocated in the plan. Various parts of the county are Nitrate Vulnerable Zones, aquifers and Source Protection Zones.</p> <p><u>MITIGATION</u> It will be important to assess the impacts on water pollution once sites are allocated.</p>	Uncertain		
Transport				
<ul style="list-style-type: none"> <li>Cause a change in traffic flows or the nature of traffic (an increase in HGVs for example) that affects communities or areas valued for their environmental importance?</li> <li>Include actions to help to protect important distribution network nodes (e.g. rail facilities).</li> <li>Include actions that would encourage a shift from road freight to rail freight?</li> <li>Include actions that change mileage travelled per tonne?</li> </ul>	<p>The impact on transport will depend on the sites finally allocated in the plan and their relationship to processing plants and final markets.</p> <p><u>MITIGATION</u> It will be important to assess the impacts of transport once sites are allocated.</p>	Uncertain		
Waste				
<ul style="list-style-type: none"> <li>Change the amount of waste produced per tonne of mineral?</li> <li>Include actions that change the mix of aggregates produced between primary materials and secondary / recycled</li> </ul>	The timescale of the plan should not affect the amount of waste produced per tonne of mineral or the mix between primary and secondary materials.	Neutral		

Option: Time Period of the Plan (2021)				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: As identified in the issues and options assessment, an end date of 2021 would require more sites to be identified than if earlier end dates were chosen. At this stage in the development of the Core Strategy, however, there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the appraisal focuses more on how the choice of time period will integrate with other planning processes and also discusses the effects on the areas likely to see development.		Short	Medium	Long
materials?				
Climate change				
<ul style="list-style-type: none"> <li>Reduce the distance that minerals are transported?</li> </ul>	<p>The impact on distance transported will depend on the sites finally allocated in the plan and their relationship to processing plants and final markets.</p> <p><u>MITIGATION</u> It will be important to assess the impacts of transport once sites are allocated.</p>	Uncertain		
Soils and geology				
<ul style="list-style-type: none"> <li>Include actions that improve or remove geodiversity?</li> <li>Include actions that help to protect mineral reserves (i.e. through the imposition of Mineral Consultation Areas or Mineral Safeguarding Areas).</li> </ul>	<p>MCA's and Mineral Safeguarding Areas will be set within the plan regardless of the plan's duration.</p> <p><u>MITIGATION</u> The impact on geodiversity will depend on the sites allocated within the plan.</p>	Uncertain		
Employment and economy				
<ul style="list-style-type: none"> <li>Include actions that change the number of people directly employed in the minerals industry?</li> </ul>	<p>The timescale gives a degree of certainty to minerals companies, perhaps ensuring less volatility to local employment in the sector.</p>	G	G	G
<p>Potential cumulative effects: The choice of 2021 as an end date to the plan is positive in terms of its cumulative effects as it will have positive effects in combination with a number of other planning processes that it ties in with including priority habitat targets. The timescale also provides the opportunity to plan more effectively for the long term growth planned in the Milton Keynes and South Midlands Growth Area and support the provision of a clear, agreed sub-regional strategy for the period 2001-2021 for this growth area.</p>				

## Vision and Strategic Objectives

Option: Vision and Strategic Objectives				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The assessment has analysed the coverage of the aims and vision to ensure that the most important issues are addressed.		Short	Medium	Long
Biodiversity				
<ul style="list-style-type: none"> <li>• Include actions that directly or indirectly affect Natura 2000 sites, SSSIs or other designated sites?</li> <li>• Include actions that will cause habitat loss or fragmentation?</li> <li>• Include actions that help to reach targets or compromise targets of BAPs?</li> <li>• Include actions to ensure restoration to biodiversity is a priority where appropriate?</li> </ul>	<p><u>Comment on Vision</u> The vision states that minerals will be obtained from the most sustainable sources and extraction sites will be planned and located as so protect the environment. The vision is positive in that it aims for long term environmental improvements. This is in the spirit of PPS9 in that it plans not just for conservation but for enhancement.</p> <p><u>Comment on Objectives</u> The objectives discuss selecting the most sustainable extraction options and minimising adverse environmental impacts. The objectives also discuss opportunities to improve the environment and make other sustainability gains.</p>	G	G	G
Archaeology and cultural heritage				
<ul style="list-style-type: none"> <li>• Include actions that could impact upon remains, sites and monuments valued for their cultural heritage?</li> <li>• Include actions to improve education and interpretation of archaeological remains?</li> </ul>	<p><u>Comment on Vision</u> The vision states that minerals will be obtained from the most sustainable sources and extraction sites will be planned and located as so protect the environment.</p> <p><u>Comments on Objectives:</u> The objectives discuss “minimising adverse environmental impacts” and “making use of opportunities to improve the environment and make other sustainability gains”. The references to improving the environment are more in the spirit of environmental protection and strengthen the vision.</p>	G	G	G
Landscape				
<ul style="list-style-type: none"> <li>• Cause changes to designated areas which threatens the reason for their designation?</li> <li>• Cause changes to the landscape / that (in themselves or cumulatively with other proposals) are completely at variance with the character of the area?</li> </ul>	<p><u>Comment on Vision</u> The vision states that minerals will be obtained from the most sustainable sources and extraction sites will be planned and located as so protect the environment.</p> <p><u>Comments on Objectives:</u> The objectives discuss “minimising adverse environmental impacts” and “making</p>	G	G	G

Option: Vision and Strategic Objectives				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The assessment has analysed the coverage of the aims and vision to ensure that the most important issues are addressed.		Short	Medium	Long
<ul style="list-style-type: none"> <li>Change the number of people that are affected by the visual impact of minerals development?</li> <li>Include actions which will enhance landscape through restoration?</li> <li>Change the amount of accessible greenspace available?</li> </ul>	<p>use of opportunities to improve the environment and make other sustainability gains". The references to improving the environment are more in the spirit of environmental protection and strengthen the vision.</p> <p>A landscape character assessment process has been ongoing in the County for a number of years and this process has outlined development guidelines for each character type in the county, many of which are currently affected by mineral development. Comments made at the issues and options stage of the SA have been taken into account and a new objective has been added to ensure that sites are sympathetic to their local landscape character.</p>			
Land use				
<ul style="list-style-type: none"> <li>To what extent does the option help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).</li> </ul>	<p><u>Comment on Vision</u> The vision makes reference to the sustainable communities' growth agenda and directs planning policy towards ensuring that appropriate levels of minerals are available to support the growth agenda.</p> <p><u>Comment on Objectives</u> The objectives set the framework for the plan to make appropriate provisions for material by setting aggregate landbanks and making appropriate provision for other material. A new part to the final objective has been added which cross refers to the aims of other strategic documents – BAPs, River Catchment Management Plans etc.</p>	G	G	G
Air quality and noise				
<ul style="list-style-type: none"> <li>Change the amount of pollution caused by mineral working?</li> <li>Encourage suitable mitigation measures?</li> </ul>	<p><u>Comment on Vision</u> The vision states that minerals will be obtained from the most sustainable sources and extraction sites will be planned and located as so protect the environment.</p> <p><u>Comments on Objectives:</u> The objectives discuss "minimising adverse environmental impacts" and "making use of opportunities to improve the environment and make other sustainability gains". The references to improving the environment are more in the spirit of</p>	G	G	G

Option: Vision and Strategic Objectives				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The assessment has analysed the coverage of the aims and vision to ensure that the most important issues are addressed.		Short	Medium	Long
	environmental protection and strengthen the vision. A reference to amenity impacts has also been added to the objectives.			
Human health, population and social inclusion				
<ul style="list-style-type: none"> <li>• Cause a change in the number of people directly affected by mineral working (living in close proximity to a mineral site or an access route) whose impact cannot be mitigated?</li> <li>• Cause a cumulative impact on certain communities (either through permitting more reserves affecting the same community or by lengthening the time period of permission)?</li> </ul>	<p><u>Comment on Vision</u> The vision refers to supply to meet local development needs and discusses meeting needs using the most sustainable sources.</p> <p><u>Comment on Objectives</u> A new objective has been added in response to comments made in the SA of the issues and options. The new objective seeks to ensure that host communities derive tangible benefits from mineral working undertaken in their area.</p> <p><u>MITIGATION</u> The supporting text of the preferred options document (or submission draft of the document) should discuss what these benefits might be and the timescale in which they would be expected to be felt.</p>	G	G	G
Economic growth – minerals and material assets				
<ul style="list-style-type: none"> <li>• Help ensure that a sustainable contribution is made to the sub regional aggregate apportionment?</li> </ul>	<p><u>Comment on Vision</u> The vision makes reference to the sustainable communities' growth agenda and directs planning policy towards ensuring that appropriate levels of minerals are available to support local development arising from regional policy.</p> <p><u>Comment on Objectives</u> The objectives set the framework for the plan to make appropriate provisions for material by setting appropriate aggregate landbanks and making appropriate provision for other material. The issues and options process has tested options that meet the sub regional apportionment and some that don't in order to test what the most sustainable option is.</p>	G	G	G
Conservation and protection of water resources				

Option: Vision and Strategic Objectives						
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect				
Assumptions: The assessment has analysed the coverage of the aims and vision to ensure that the most important issues are addressed.				Short	Medium	Long
<ul style="list-style-type: none"> <li>• Include actions that could increase / reduce the risk of effects on groundwater and surface water quality and quantity?</li> <li>• Include measures that could increase / decrease the potential for flooding?</li> </ul>	<p><u>Comment on Vision</u> The vision states that minerals will be obtained from the most sustainable sources and extraction sites will be planned and located as so protect the environment. The vision also states that in the long term extraction should benefit river catchment management.</p> <p><u>Comment on Objectives:</u> The objectives discuss “minimising adverse environmental impacts” and “making use of opportunities to improve the environment and make other sustainability gains”. The references to improving the environment are more in the spirit of environmental protection and strengthen both the alternative aims. A new part of the final objective has been added that discusses how mineral development can contribute to River Catchment Management Plans.</p>	G	G	G		
Transport						
<ul style="list-style-type: none"> <li>• Cause a change in traffic flows or the nature of traffic (an increase in HGVs for example) that affects communities or areas valued for their environmental importance?</li> <li>• Include actions to help to protect important distribution network nodes (e.g. rail facilities).</li> <li>• Include actions that would encourage a shift from road freight to rail freight?</li> <li>• Include actions that change mileage travelled per tonne?</li> </ul>	<p><u>Comment on Vision</u> The vision does not refer directly to any transport related issues. However, the vision does aim for mineral development to take place from the most sustainable sources.</p> <p><u>Comment on Objectives</u> Transport is a key impact of mineral development and the objectives recognise this.</p>	G	G	G		
Waste						
<ul style="list-style-type: none"> <li>• Change the amount of waste produced per tonne of mineral?</li> <li>• Include actions that change the mix of aggregates produced between primary materials and secondary / recycled materials?</li> </ul>	<p><u>Comment on Vision</u> The vision refers to supply to meet local development needs and discusses meeting needs using the most sustainable sources.</p> <p><u>Comment on Objectives</u> Aggregate recycling is not referred to in any of the objectives. The term sustainable sources could be interpreted to mean this. Aggregate recycling will be</p>	G	G	G		

Option: Vision and Strategic Objectives				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The assessment has analysed the coverage of the aims and vision to ensure that the most important issues are addressed.		Short	Medium	Long
	dealt with through the Waste DPD.			
Climate change				
<ul style="list-style-type: none"> <li>Reduce the distance that minerals are transported?</li> </ul>	<p><u>Comment on Vision</u> The vision refers to supply to meet local development needs and discusses meeting needs using the most sustainable sources.</p> <p><u>Comment on Objectives:</u> Transport is a key impact of mineral development and the objectives recognise this. However, the objectives refer to the environmental impact of transport and not specifically to reducing the distance travelled.</p> <p><u>MITIGATION</u> The addition of an objective referring to reducing the distance travelled would be a useful addition, recognising the important of climate change.</p>	O	O	O
Soils and geology				
<ul style="list-style-type: none"> <li>Include actions that improve or remove geodiversity?</li> <li>Include actions that help to protect mineral reserves (i.e. through the imposition of Mineral Consultation Areas or Mineral Safeguarding Areas).</li> </ul>	<p><u>Comment on Vision</u> The vision refers to supply to meet local development needs and discusses meeting needs using the most sustainable sources.</p> <p><u>Comment on Objectives</u> The objectives discuss “minimising adverse environmental impacts” and “making use of opportunities to improve the environment and make other sustainability gains”. The references to improving the environment are more in the spirit of environmental protection and strengthen the vision.</p>	G	G	G
Employment and economy				
<ul style="list-style-type: none"> <li>Include actions that change the number of people directly employed in the minerals industry?</li> </ul>	<p><u>Comment on Vision</u> The vision refers to supply to meet local development needs and discusses meeting needs using the most sustainable sources.</p> <p><u>Comment on Objectives</u> No direct references are made to employment but the plan does aim to make</p>	G	G	G

Option: Vision and Strategic Objectives			
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect	
Assumptions: The assessment has analysed the coverage of the aims and vision to ensure that the most important issues are addressed.		Short	Medium Long
	appropriate provision for material.		
<p>Potential cumulative effects: The plan aims to provide an appropriate amount of building material supporting the growth agenda, thus having a positive cumulative impact. The plan also aims to make use of opportunities to improve the environment and make other sustainability gains thus having a positive cumulative impact in association with plans that aim to improve the environment of the county.</p>			

## Overall Spatial Strategy

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
Biodiversity				
<ul style="list-style-type: none"> <li>• Include actions that directly or indirectly affect Natura 2000 sites, SSSIs or other designated sites?</li> <li>• Include actions that will cause habitat loss or fragmentation?</li> <li>• Include actions that help to reach targets or compromise targets of BAPs?</li> <li>• Include actions to ensure restoration to biodiversity is a priority where appropriate?</li> </ul>	<p>Minerals can only be developed where they occur. Therefore, the job of the Minerals DPD is to guide development to areas that are more sustainable than the alternatives and that can offer more long term benefits. Not resuming mineral working in the Upper Ouse Valley will protect the existing biodiversity, flora and fauna. The Upper Ouse Valley is a sensitive area. The area contains a County Wildlife Site on it and most of the area is valued flood plain grassland. The area is less intensively farmed than other areas containing minerals and is therefore likely to have more biodiversity value. There are also some Priority Species sites in the Upper Ouse valley. Two of the 5 sites put forward at the issues and options stage in the Upper Ouse Valley have significant objections from the Bedfordshire County Council ecologist and English Nature due to their proximity to sensitive SSSI sites (MD46 and 37). However, not working the Upper Ouse Valley may result in a loss of significant habitat creation opportunities as identified by the BAP. For example, the introduction of wetlands may lead to richer habitats than are currently on site. It is designated as a Biodiversity Opportunity Area at the moment and minerals workings could provide funding to promote this.</p> <p>Not resuming development in the Upper Ouse Valley will lead to other areas such as the Lower Ouse and Ivel Valleys, the area around Biggleswade and the Greensand Ridge receiving more development and consequently additional pressure being placed on the sensitive areas around these clusters, particularly affecting the River Ivel where sites could have effects on an NNR, SSSIs and CWSs. However, on balance the Upper Ouse Valley is more sensitive. In addition sites in the other areas are in areas of wetland opportunity and could contribute positively in the long term.</p> <p>In terms of silica sand, potential sites around Heath and Reach/Leighton Buzzard do not affect particularly sensitive areas in terms of biodiversity although Nares</p>	G	G	G

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
	<p>Gladley Marsh SSSI is in the vicinity. Heath and Reach is an opportunity area for heathland and acid grassland and sites could have a positive effect in the long term if sites were worked and restored to this after use.</p> <p>The main benefit of focusing development on existing sites is that a more strategic approach to restoration and long term use can be found. In addition, focusing on satellite sites reduces the effect of minerals transportation from site to processing plant.</p>			
Archaeology and cultural heritage				
<ul style="list-style-type: none"> <li>• Include actions that could impact upon remains, sites and monuments valued for their cultural heritage?</li> <li>• Include actions to improve education and interpretation of archaeological remains?</li> </ul>	<p>The Upper Ouse Valley is likely to include certain classes of sites that are very rare such as an Ancient Monuments as well as being affected by Areas of Archaeological Interest. Not resuming development in the Upper Ouse Valley will lead to other areas such as the Lower Ouse and Ivel Valleys, the area around Biggleswade and the Greensand Ridge receiving more development and consequently additional pressure being placed on the sensitive areas around these clusters, many of which also affect Areas of Archaeological Interest. On balance, the Upper Ouse Valley is slightly more sensitive than the other areas affected.</p> <p>In terms of silica sand, potential sites do not affect particularly sensitive areas in terms of archaeology. Some parts of the area are designated as Areas of Archaeological Interest and this would require investigation before development went ahead.</p> <p>The use of the sequential test might mean that it is easier to provide education and interpretation of archaeological remains (as a more strategic approach can be taken to restoration perhaps involving education regarding archaeological remains). However, this is not felt to be a significant issue.</p>	G	G	G

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
Landscape				
<ul style="list-style-type: none"> <li>• Cause changes to designated areas which threatens the reason for their designation?</li> <li>• Cause changes to the landscape / that (in themselves or cumulatively with other proposals) are completely at variance with the character of the area?</li> <li>• Change the number of people that are affected by the visual impact of minerals development?</li> <li>• Include actions which will enhance landscape through restoration?</li> <li>• Change the amount of accessible greenspace available?</li> </ul>	<p>The landscape value of the Upper Ouse Valley is higher than other parts of the county (all of the sites put forward in this area are within an Area of Great Landscape Value). Not resuming mineral development in this area is positive in this respect.</p> <p>In terms of silica sand, sites near Leighton Buzzard sit within the Landscape Character Area of <i>settled and farmed clay hills</i> (type 8) making the area relatively visible from a large area and giving development a large spatial extent. However, landscape condition is considered to be poor in this area and is one characterised by sand pits. The long term effect of the site is dependent on the form of restoration.</p> <p>Sites near Heath and Reach are on the boundary between landscape type 5 (settled and farmed clay vales) and type 6 (woodland greensand ridge). The Bedfordshire Landscape Character Assessment Report Volume 1 states that further development on the base of the Greensand Ridge should be avoided to retain the dramatic visual contrast between flat plains and steep slopes. The effect of developing this area, therefore, could be significant affecting a widespread area. The long term effects would depend on restoration. This is also reflected by public concern regarding particularly views to the Chilterns. There are currently open views across the A5.</p> <p>The main benefit of focusing development on new sites is that a more strategic approach to restoration and long term use can be found in terms of a strategic approach to green infrastructure contributing to projects such as the Bedford River Valley Park and the Ivel and Ouse Countryside Project.</p> <p><u>MITIGATION</u> At the restoration stage consideration should be given to how any sites can</p>	G	G	G
		O	O	O

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
	contribute to the Bedford River Valley Park and the Ivel and Ouse Countryside Project.			
Land use				
<ul style="list-style-type: none"> <li>To what extent does the option help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).</li> </ul>	<p>Development of the Upper Ouse Valley would help to achieve biodiversity objectives through restoration and help plan strategically for flood defence. In this option these benefits are missed. Some of the sites in the other areas (Lower Ouse and Ivel Valley etc) could contribute to projects such as the Bedford River Valley Park and the Ivel and Ouse Countryside Project.</p> <p>In terms of silica sand, sites near Leighton Buzzard and Heath and Reach could contribute open amenity space (on restoration) to support growth within Leighton Buzzard. Sites that are within the Greensand Trust Area could help contribute to its long term aims after restoration has been completed.</p> <p>The main benefit of focusing development on new sites is that a more strategic approach to restoration and long term use can be found and better integrated with the plans of other agencies and projects (such as the examples given above).</p>	G	G	G
Air quality and noise				
<ul style="list-style-type: none"> <li>Change the amount of pollution caused by mineral working?</li> <li>Encourage suitable mitigation measures?</li> </ul>	<p>The impact of air quality and noise from the aggregates sites is not felt to be significantly different from those sites in the Upper Ouse Valley.</p> <p>In terms of silica sand, sites would have to transport minerals to processing sites to the North East of Heath and Reach (Double Arches/ Munday's Hill). This involves either going through central Leighton Buzzard (most often) or (less often)</p>	O	O	O

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
	<p>round via A5 (which has a poor junction at the access to production sites). Mineral traffic through Leighton Buzzard is of major concern to local residents and development could potentially cause noise and air pollution from traffic congestion. As Leighton Buzzard has been identified as a growth area in the Milton Keynes and South Midlands Sub Regional Strategy, traffic congestion is likely to increase even without further mineral development.</p> <p>In terms of the effects of the sequential test, extensions to existing sites and satellite sites will concentrate development in certain areas meaning that air and noise pollution is also concentrated. This will mean a more significant effect on some communities (many of which have been living in close proximity to mineral sites for years). The effect of this can only be assessed in detail on a site to site basis.</p> <p><u>MITIGATION</u> The effect on communities needs to be assessed at the site selection and assessment stage.</p>			
Human health, population and social inclusion				
<ul style="list-style-type: none"> <li>• Cause a change in the number of people directly affected by mineral working (living in close proximity to a mineral site or an access route) whose impact cannot be mitigated?</li> <li>• Cause a cumulative impact on certain communities (either through permitting more reserves affecting the same community or by lengthening the time period of permission)?</li> </ul>	<p>The Upper Ouse Valley is located in a rural area to the North West of Bedford where the villages most likely to be negatively impacted by minerals developments are Oakley, Harrold, Carlton, Odell and Felmersham, Stevington, and Bromham. These are likely to be negatively impacted by nuisance issues mainly caused by vehicle movements to the sites. Not developing sites in this area would mean that these impacts are minimised.</p> <p>However, not resuming development in the Upper Ouse Valley will lead to other areas receiving more development, many of which have been living in close proximity to mineral sites for years. The effect of this can only be assessed in detail on a site to site basis.</p>	○	○	○

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
	<p>A large part of the development of the Greensand Ridge has occurred around Leighton Buzzard / Heath and Reach historically and the area has a long history of intensive mineral working. This has a large cumulative effect on the residents which will intensify. The public workshops held as part of the issues and options stage also indicated a concern that development around Leighton Buzzard will destroy open countryside which forms a natural boundary between Leighton Buzzard and Billington, resulting in the village of Billington losing its identity. Given the history of redundant sandpits in the area (given over to housing), there would need to be a guarantee of future protection from such uses in order to retain this break in development. There will also be impacts on new residential development.</p> <p>In terms of the effects of the sequential test, extensions to existing sites and satellite sites will concentrate development in certain areas meaning that air and noise pollution is also concentrated. This will mean a more significant effect on some communities (many of which have been living in close proximity to mineral sites for years). As above, the effect of this can only be assessed in detail on a site to site basis.</p> <p><b>MITIGATION</b> The effect on communities needs to be assessed at the site selection and assessment stage.</p>			
Economic growth – minerals and material assets				
<ul style="list-style-type: none"> <li>Help ensure that a sustainable contribution is made to the sub regional aggregate apportionment?</li> </ul>	This is an issue only for the aggregate sites. The strategy will ensure that a balanced range of mineral types can be developed in the area. The aggregates strategy commits the plan to provide for minerals supply at the agreed sub regional apportionment.	G	G	G
Conservation and protection of water resources				

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
<ul style="list-style-type: none"> <li>• Include actions that could increase / reduce the risk of effects on groundwater and surface water quality and quantity?</li> <li>• Include measures that could increase / decrease the potential for flooding?</li> </ul>	<p>Development in the Upper Ouse Valley may create an opportunity to alleviate flood problems in the long term. However this potential benefit is likely to be overridden by potential negative impacts within this area during the site operation.</p> <p>In terms of silica sand, the area falls within a Nitrate Vulnerable Zone. Parts of the area are also above a major aquifer and a Source Protection Zone 3. Therefore, this area is quite sensitive in terms of water resources and development could have a cumulative impact in association with the existing development.</p> <p><u>MITIGATION</u> At the planning application stage the effects on the water environment need to be assessed very carefully.</p>	R	R	R
Transport				
<ul style="list-style-type: none"> <li>• Cause a change in traffic flows or the nature of traffic (an increase in HGVs for example) that affects communities or areas valued for their environmental importance?</li> <li>• Include actions to help to protect important distribution network nodes (e.g. rail facilities).</li> <li>• Include actions that would encourage a shift from road freight to rail freight?</li> <li>• Include actions that change mileage travelled per tonne?</li> </ul>	<p>The transport situation is similar in all the areas where aggregate development could take place. Most sites would use secondary roads to reach a strategic road this would have a negative impact on local villages as it is not possible to completely route HGV vehicles away from village roads. However, there are existing railhead facilities near Bedford so the sites to the East of Bedford could have a possibility of using these sites. The River Great Ouse is not navigable in the area of the cluster due to a number of weirs.</p> <p>In terms of silica sand, sites near Leighton Buzzard / Heath and Reach would have to transport minerals to processing sites to the North East of Heath and Reach (Double Arches/ Munday's Hill). This involves either going through central Leighton Buzzard (most often) or (less often) round via the A5 (which has bad junction at access to production sites). Mineral traffic through Leighton Buzzard is of major concern to local residents and development could potentially cause noise and air pollution from traffic congestion. As Leighton Buzzard has been identified as a growth area in the Milton Keynes and South Midlands Sub Regional Strategy, traffic congestion is likely to increase even without further mineral development.</p>	O	O	G

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
	<p>In terms of the sequential test, the main benefit of focusing development on satellite sites is that it reduces the effect of minerals transportation from site to processing plant. However, the effect of concentrating on existing sites is that this will concentrate development in certain areas meaning that continued mineral transport will have a significant effect on some communities (many of which have been living in close proximity to mineral sites for years). As above, the effect of this can only be assessed in detail on a site to site basis.</p> <p><u>MITIGATION</u> The effects on communities (especially in terms of transport issues) should be assessed at the planning application stage.</p>			
Waste				
<ul style="list-style-type: none"> <li>Change the amount of waste produced per tonne of mineral?</li> <li>Include actions that change the mix of aggregates produced between primary materials and secondary / recycled materials?</li> </ul>	The spatial strategy will not have an effect on how much waste is produced per tonne of mineral and change the mix of aggregated produced. Other options within the plan address these issues.	Neutral		
Climate change				
<ul style="list-style-type: none"> <li>Reduce the distance that minerals are transported?</li> </ul>	Markets for aggregates are local in the area being no more than a 20 mile radius of any given site (this being maximum economic road haul). In terms of silica sand, the market is further. The strategy seeks to minimise the effects of this by seeking to ensure that the plan area as a whole can supply a balanced range of mineral types.	G	G	G
Soils and geology				
<ul style="list-style-type: none"> <li>Include actions that improve or remove geodiversity?</li> <li>Include actions that help to protect mineral reserves (i.e.</li> </ul>	The spatial strategy will not have an effect on this criterion. Other options within the plan address these issues.	Neutral		

Option: Overall Spatial Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: At this stage in the development of the Core Strategy there is still uncertainty regarding the sites that will be allocated within the plan. Therefore, rather than analysing the effects of individual sites the assessment focuses on the broad impacts on areas that could see development such as the Lower Ouse and Ivel / Biggleswade, Heath and Reach and Leighton Buzzard. The appraisal also discusses the potential effects of the sequential test.		Short	Medium	Long
through the imposition of Mineral Consultation Areas or Mineral Safeguarding Areas).				
Employment and economy				
<ul style="list-style-type: none"> <li>Include actions that change the number of people directly employed in the minerals industry?</li> </ul>	The plan aims to ensure that the plan area as a whole can supply a balanced range of mineral types. This will help to safeguard jobs. The strategy of focusing on existing and satellite sites will ensure that the people employed at these sites have a greater level of job security.	G	G	G
Potential cumulative effects: The sequential test is likely to concentrate development in areas which have been living in close proximity to mineral sites for years causing a cumulative effect with mineral sites that are currently operational.				

## Aggregate Strategy

Option: Aggregate Strategy						
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect				
Assumptions: The aggregates strategy in totality has been assessed together here. This includes the approach to recycled aggregates (although the implications of sites for recycling will be considered in the Waste DPD); the approach to securing crushed rock and marine dredged materials; the approach to sub regional apportionment and landbank split and the approach to productive capacity. It is not an assessment of potential sites as spatial information is not attached to this strategy. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage. The appraisal includes the assessment of the following supplementary issues: Supplementary Issue 1 - Land-won aggregates apportionment, Supplementary Issue 2 - Productive capacity and Supplementary Issue 4 – Contribution of recycled aggregates.				Short	Medium	Long
Biodiversity						
<ul style="list-style-type: none"> <li>• Include actions that directly or indirectly affect Natura 2000 sites, SSSIs or other designated sites?</li> <li>• Include actions that will cause habitat loss or fragmentation?</li> <li>• Include actions that help to reach targets or compromise targets of BAPs?</li> <li>• Include actions to ensure restoration to biodiversity is a priority where appropriate?</li> </ul>	<p>As shown in the SA of the issues and options, the sub regional apportionment is a good basis for planning for the future development of the sub region including the development needed in the growth areas. The options do not maximise the overall aggregate needed, however, so will not require the largest number of site allocations. A split based on 10 year production averages (taking into account the fact that some production in Bedfordshire is exported) will allow some flexibility to cater for increases in demand that would be expected under the growth agenda. Choosing not to meet the sub regional apportionment or to choose a split that would result in under production of concreting material would risk substitution from other areas (which may be more sensitive in terms of ecological designations). This would also mean that material is travelling much further with resultant sustainability effects.</p> <p>The approach to recycling, the safeguarding of wharves and railheads and the careful monitoring of productive capacity will help to encourage the use of recycled materials and will also ensure that no more sites than necessary are allocated in the short and medium term (through ensuring imported crushed rock can play its part in reducing the amount of local land won material that has to be found. The monitoring of productive capacity also avoids the situation whereby there are unacceptable shortfalls or oversupply of local material.</p>	G	G	G		
Archaeology and cultural heritage						
<ul style="list-style-type: none"> <li>• Include actions that could impact upon remains, sites and monuments valued for their cultural heritage?</li> </ul>	As above	G	G	G		

Option: Aggregate Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The aggregates strategy in totality has been assessed together here. This includes the approach to recycled aggregates (although the implications of sites for recycling will be considered in the Waste DPD); the approach to securing crushed rock and marine dredged materials; the approach to sub regional apportionment and landbank split and the approach to productive capacity. It is not an assessment of potential sites as spatial information is not attached to this strategy. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage. The appraisal includes the assessment of the following supplementary issues: Supplementary Issue 1 - Land-won aggregates apportionment, Supplementary Issue 2 - Productive capacity and Supplementary Issue 4 – Contribution of recycled aggregates.		Short	Medium	Long
<ul style="list-style-type: none"> <li>• Include actions to improve education and interpretation of archaeological remains?</li> </ul>				
Landscape				
<ul style="list-style-type: none"> <li>• Cause changes to designated areas which threatens the reason for their designation?</li> <li>• Cause changes to the landscape / that (in themselves or cumulatively with other proposals) are completely at variance with the character of the area?</li> <li>• Change the number of people that are affected by the visual impact of minerals development?</li> <li>• Include actions which will enhance landscape through restoration?</li> <li>• Change the amount of accessible greenspace available?</li> </ul>	As above	G	G	G
Land use				
<ul style="list-style-type: none"> <li>• To what extent does the option help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).</li> </ul>	The strategy is a good basis for planning for the future development of the sub region including the development needed in the growth areas.	G	G	G
Air quality and noise				
<ul style="list-style-type: none"> <li>• Change the amount of pollution caused by mineral working?</li> <li>• Encourage suitable mitigation measures?</li> </ul>		G	G	G

Option: Aggregate Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The aggregates strategy in totality has been assessed together here. This includes the approach to recycled aggregates (although the implications of sites for recycling will be considered in the Waste DPD); the approach to securing crushed rock and marine dredged materials; the approach to sub regional apportionment and landbank split and the approach to productive capacity. It is not an assessment of potential sites as spatial information is not attached to this strategy. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage. The appraisal includes the assessment of the following supplementary issues: Supplementary Issue 1 - Land-won aggregates apportionment, Supplementary Issue 2 - Productive capacity and Supplementary Issue 4 – Contribution of recycled aggregates.		Short	Medium	Long
Human health, population and social inclusion				
<ul style="list-style-type: none"> <li>• Cause a change in the number of people directly affected by mineral working (living in close proximity to a mineral site or an access route) whose impact cannot be mitigated?</li> <li>• Cause a cumulative impact on certain communities (either through permitting more reserves affecting the same community or by lengthening the time period of permission)?</li> </ul>	<p>The strategy chosen will not result in the largest amount of site allocations (as compared to the other option tested at the issues and options stage). However, it is likely to lead to some new sites for concreting aggregate at least. However, this will be tempered by the approach to recycled aggregates, the safeguarding of wharves and railheads and the careful monitoring of productive capacity.</p> <p>These approaches will help to encourage the use of recycled materials and will also ensure that no more sites than necessary are allocated in the short and medium term (through ensuring imported crushed rock can play its part in reducing the amount of local land won material that has to be found).</p>	G	G	G
Economic growth – minerals and material assets				
<ul style="list-style-type: none"> <li>• Help ensure that a sustainable contribution is made to the sub regional aggregate apportionment?</li> </ul>	The strategy will help to ensure that a sustainable contribution is made to the sub regional aggregate apportionment	G	G	G
Conservation and protection of water resources				
<ul style="list-style-type: none"> <li>• Include actions that could increase / reduce the risk of effects on groundwater and surface water quality and quantity?</li> <li>• Include measures that could increase / decrease the potential for flooding?</li> </ul>	As shown in the SA of the issues and options, the sub regional apportionment is a good basis for planning for the future development of the sub region including the development needed in the growth areas. The options do not maximise the overall aggregate needed, however, so will not require the largest number of site allocations. A split based on 10 year production averages (taking into account the fact that some production in Bedfordshire is exported) will allow some flexibility to cater for increases in demand that would be expected under the growth agenda. In addition, there is also the potential for river valley sites to contribute, through appropriate restoration, to surface water management (e.g. flood storage).	G	G	G

Option: Aggregate Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The aggregates strategy in totality has been assessed together here. This includes the approach to recycled aggregates (although the implications of sites for recycling will be considered in the Waste DPD); the approach to securing crushed rock and marine dredged materials; the approach to sub regional apportionment and landbank split and the approach to productive capacity. It is not an assessment of potential sites as spatial information is not attached to this strategy. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage. The appraisal includes the assessment of the following supplementary issues: Supplementary Issue 1 - Land-won aggregates apportionment, Supplementary Issue 2 - Productive capacity and Supplementary Issue 4 – Contribution of recycled aggregates.		Short	Medium	Long
	<p>Choosing not to meet the sub regional apportionment or to choose a split that would result in under production of concreting material would risk substitution from other areas (which may be more sensitive in terms of the environment). This would also mean that material is travelling much further with resultant sustainability effects.</p> <p>The approach to recycling, the safeguarding of wharves and railheads and the careful monitoring of productive capacity will help to encourage the use of recycled materials and will also ensure that no more sites than necessary are allocated in the short and medium term (through ensuring imported crushed rock can play its part in reducing the amount of local land won material that has to be found. The monitoring of productive capacity also avoids the situation whereby there are unacceptable shortfalls or oversupply of local material.</p>			
Transport				
<ul style="list-style-type: none"> <li>• Cause a change in traffic flows or the nature of traffic (an increase in HGVs for example) that affects communities or areas valued for their environmental importance?</li> <li>• Include actions to help to protect important distribution network nodes (e.g. rail facilities).</li> <li>• Include actions that would encourage a shift from road freight to rail freight?</li> <li>• Include actions that change mileage travelled per tonne?</li> </ul>	This option minimises the risk of substitution from other areas, thus reducing the distance travelled.	G	G	G
Waste				
<ul style="list-style-type: none"> <li>• Change the amount of waste produced per tonne of</li> </ul>	No effect. The Waste DPD will have more effect on how much material is	Neutral		

Option: Aggregate Strategy				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The aggregates strategy in totality has been assessed together here. This includes the approach to recycled aggregates (although the implications of sites for recycling will be considered in the Waste DPD); the approach to securing crushed rock and marine dredged materials; the approach to sub regional apportionment and landbank split and the approach to productive capacity. It is not an assessment of potential sites as spatial information is not attached to this strategy. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage. The appraisal includes the assessment of the following supplementary issues: Supplementary Issue 1 - Land-won aggregates apportionment, Supplementary Issue 2 - Productive capacity and Supplementary Issue 4 – Contribution of recycled aggregates.		Short	Medium	Long
<ul style="list-style-type: none"> <li>mineral?</li> <li>Include actions that change the mix of aggregates produced between primary materials and secondary / recycled materials?</li> </ul>	recycled by allocating sites.			
Climate change				
<ul style="list-style-type: none"> <li>Reduce the distance that minerals are transported?</li> </ul>	This option minimises the risk of substitution from other areas, thus reducing the distance travelled.	G	G	G
Soils and geology				
<ul style="list-style-type: none"> <li>Include actions that improve or remove geodiversity?</li> <li>Include actions that help to protect mineral reserves (i.e. through the imposition of Mineral Consultation Areas or Mineral Safeguarding Areas).</li> </ul>	No effect	Neutral		
Employment and economy				
<ul style="list-style-type: none"> <li>Include actions that change the number of people directly employed in the minerals industry?</li> </ul>	The strategy seeks to ensure that an adequate supply of material is provided to meet Bedfordshire's needs. This will help to provide job security for those in the minerals industry.	G	G	G
Potential cumulative effects: The aggregates strategy aims to provide an appropriate amount of building material to support the long term growth planned in the Milton Keynes and South Midlands Growth Area. It thus has a positive cumulative impact allowing this growth to be planned and implemented effectively without having wider sustainability impacts on other mineral producing areas further afield.				

## Specialist Silica Sand

Option: Specialist Silica Sand				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<p>Assumptions: The strategy for silica sand is that further reserves of silica sand will only be allocated where there is a demonstrable need for the product, and this need cannot be met from other existing sites in the plan area, or from alternative materials. The likely implications of the strategy (in association with the sequential test) is that development will be focused on existing sites. Therefore, the assessment focuses on the environmental sensitivities and other sustainability The effects of concentrating development in Heath and Reach / Leighton Buzzard. It is not an assessment of potential sites although the information available on sites raised at the issues and options stage has been used in the assessment. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage.</p>				
Biodiversity				
<ul style="list-style-type: none"> <li>• Include actions that directly or indirectly affect Natura 2000 sites, SSSIs or other designated sites?</li> <li>• Include actions that will cause habitat loss or fragmentation?</li> <li>• Include actions that help to reach targets or compromise targets of BAPs?</li> <li>• Include actions to ensure restoration to biodiversity is a priority where appropriate?</li> </ul>	In terms of silica sand, potential sites around Heath and Reach/Leighton Buzzard do not affect particularly sensitive areas in terms of biodiversity although Nares Gladley Marsh SSSI is in the vicinity. Heath and Reach is an opportunity area for heathland and acid grassland and sites could have a positive effect in the long term if sites were worked and restored to this after use.	G	G	G
Archaeology and cultural heritage				
<ul style="list-style-type: none"> <li>• Include actions that could impact upon remains, sites and monuments valued for their cultural heritage?</li> <li>• Include actions to improve education and interpretation of archaeological remains?</li> </ul>	Sites around Leighton Buzzard do not affect particularly sensitive areas in terms of archaeology. Sites further along the Greensand Ridge near Heath and Reach are slightly more sensitive in terms of archaeology and heritage, with all of them being in Areas of Archaeological Potential or potentially affecting sensitive areas such as the Flit Valley.	G	G	G
Landscape				
<ul style="list-style-type: none"> <li>• Cause changes to designated areas which threatens the reason for their designation?</li> <li>• Cause changes to the landscape / that (in themselves or cumulatively with other proposals) are completely at variance with the character of the area?</li> </ul>	In terms of silica sand, sites near Leighton Buzzard sit within the Landscape Character Area of <i>settled and farmed clay hills</i> (type 8) making the area relatively visible from a large area and giving development a large spatial extent. However, landscape condition is considered to be poor in this area and is one characterised by sand pits. The long term effect of the site is dependent on the form of restoration.	O	O	O

Option: Specialist Silica Sand				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The strategy for silica sand is that further reserves of silica sand will only be allocated where there is a demonstrable need for the product, and this need cannot be met from other existing sites in the plan area, or from alternative materials. The likely implications of the strategy (in association with the sequential test) is that development will be focused on existing sites. Therefore, the assessment focuses on the environmental sensitivities and other sustainability The effects of concentrating development in Heath and Reach / Leighton Buzzard. It is not an assessment of potential sites although the information available on sites raised at the issues and options stage has been used in the assessment. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage.		Short	Medium	Long
<ul style="list-style-type: none"> <li>Change the number of people that are affected by the visual impact of minerals development?</li> <li>Include actions which will enhance landscape through restoration?</li> <li>Change the amount of accessible greenspace available?</li> </ul>	<p>Sites near Heath and Reach are on the boundary between landscape type 5 (settled and farmed clay vales) and type 6 (woodland greensand ridge). The Bedfordshire Landscape Character Assessment Report Volume 1 states that further development on the base of the Greensand Ridge should be avoided to retain the dramatic visual contrast between flat plains and steep slopes. The effect of developing this area, therefore, could be significant affecting a widespread area. The long term effects would depend on restoration. This is also reflected by public concern regarding particularly views to the Chilterns. There are currently open views across the A5.</p> <p><u>MITIGATION</u> At the restoration stage consideration should be given to how any sites can contribute to the Greensand Trust Project Area.</p>			
Land use				
<ul style="list-style-type: none"> <li>To what extent does the option help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).</li> </ul>	Development of resources in this area could contribute open amenity space (on restoration) to support growth within Leighton Buzzard. Sites to the south of Leighton Buzzard are within the Greensand Trust Area and could help contribute to its long term aims after restoration has been completed.	G	G	G
Air quality and noise				
<ul style="list-style-type: none"> <li>Change the amount of pollution caused by mineral working?</li> <li>Encourage suitable mitigation measures?</li> </ul>	<p>A large part of the development of the Greensand Ridge has occurred in this area historically. This has a large cumulative effect on the residents which will intensify if all the development in the Greensand Ridge continues.</p> <p>In terms of air and noise pollution from transport, sites to south of Leighton</p>	R	R	O

Option: Specialist Silica Sand				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<p>Assumptions: The strategy for silica sand is that further reserves of silica sand will only be allocated where there is a demonstrable need for the product, and this need cannot be met from other existing sites in the plan area, or from alternative materials. The likely implications of the strategy (in association with the sequential test) is that development will be focused on existing sites. Therefore, the assessment focuses on the environmental sensitivities and other sustainability The effects of concentrating development in Heath and Reach / Leighton Buzzard. It is not an assessment of potential sites although the information available on sites raised at the issues and options stage has been used in the assessment. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage.</p>				
	<p>Buzzard would have to transport minerals to processing sites to the North East of Heath and Reach (Double Arches/ Munday's Hill). This involves either going through central Leighton Buzzard (most often) or (less often) round via A5 (which has a poor junction at the access to production sites). Mineral traffic through Leighton Buzzard is of major concern to local residents and development could potentially cause noise and air pollution from traffic congestion. As Leighton Buzzard has been identified as a growth area in the Milton Keynes and South Midlands Sub Regional Strategy, traffic congestion is likely to increase even without further mineral development.</p> <p><b>MITIGATION</b> It is unclear how this potential impact could be mitigated other than by avoiding the selection of sites that will exacerbate this problem and ensuring that HGV routes avoid Leighton Buzzard. The minerals strategy should be integrated with the preparation of the Local Development documents for this area with the aim of avoiding potential cumulative effects.</p>			
Human health, population and social inclusion				
<ul style="list-style-type: none"> <li>• Cause a change in the number of people directly affected by mineral working (living in close proximity to a mineral site or an access route) whose impact cannot be mitigated?</li> <li>• Cause a cumulative impact on certain communities (either through permitting more reserves affecting the same community or by lengthening the time period of permission)?</li> </ul>	<p>A large part of the development of the Greensand Ridge has occurred in this area historically and the area has a long history of intensive mineral working. This has a large cumulative effect on the residents which will intensify if development in the Greensand Ridge continues.</p> <p>The public workshops held as part of the issues and options stage indicated a concern that development to the south of Leighton Buzzard will destroy open countryside which forms a natural boundary between Leighton Buzzard and Billington, resulting in the village of Billington losing its identity. Given the history of redundant sandpits in the area (given over to housing), there would need to be</p>	R	R	O

Option: Specialist Silica Sand				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The strategy for silica sand is that further reserves of silica sand will only be allocated where there is a demonstrable need for the product, and this need cannot be met from other existing sites in the plan area, or from alternative materials. The likely implications of the strategy (in association with the sequential test) is that development will be focused on existing sites. Therefore, the assessment focuses on the environmental sensitivities and other sustainability The effects of concentrating development in Heath and Reach / Leighton Buzzard. It is not an assessment of potential sites although the information available on sites raised at the issues and options stage has been used in the assessment. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage.		Short	Medium	Long
	a guarantee of future protection from such uses in order to retain this break in development. There will also be impacts on new residential development.  <u>MITIGATION</u> The plan may need to consider avoiding the use of sites which will have the most significant effects for this issue and if this is not possible t include a mechanism to ensure the sensitive restoration of the sites to avoid the identified problems			
Economic growth – minerals and material assets				
<ul style="list-style-type: none"> <li>Help ensure that a sustainable contribution is made to the sub regional aggregate apportionment?</li> </ul>	MD21 would supply about 60% of its reserve to concreting applications – this equates to 0.9 million tonnes towards the aggregates landbank.	G	G	G
Conservation and protection of water resources				
<ul style="list-style-type: none"> <li>Include actions that could increase / reduce the risk of effects on groundwater and surface water quality and quantity?</li> <li>Include measures that could increase / decrease the potential for flooding?</li> </ul>	Parts of the area fall within a Nitrate Vulnerable Zone. Parts of the area are also above a major aquifer and a Source Protection Zone 3. Therefore, this area is quite sensitive in terms of water resources and development could have a cumulative impact in association with the existing development.  <u>MITIGATION</u> At the planning application stage the effects on the water environment need to be assessed very carefully.	G	G	G
Transport				
<ul style="list-style-type: none"> <li>Cause a change in traffic flows or the nature of traffic (an increase in HGVs for example) that affects communities or areas valued for their environmental importance?</li> </ul>	Sites to south of Leighton Buzzard would have to transport minerals to processing sites to the North East of Heath and Reach (Double Arches/ Mundays Hill). This involves either going through central Leighton Buzzard (most often) or (less often)	R	R	O

Option: Specialist Silica Sand				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The strategy for silica sand is that further reserves of silica sand will only be allocated where there is a demonstrable need for the product, and this need cannot be met from other existing sites in the plan area, or from alternative materials. The likely implications of the strategy (in association with the sequential test) is that development will be focused on existing sites. Therefore, the assessment focuses on the environmental sensitivities and other sustainability The effects of concentrating development in Heath and Reach / Leighton Buzzard. It is not an assessment of potential sites although the information available on sites raised at the issues and options stage has been used in the assessment. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage.		Short	Medium	Long
<ul style="list-style-type: none"> <li>• Include actions to help to protect important distribution network nodes (e.g. rail facilities).</li> <li>• Include actions that would encourage a shift from road freight to rail freight?</li> <li>• Include actions that change mileage travelled per tonne?</li> </ul>	<p>round via the A5 (which has bad junction at access to production sites). Mineral traffic through Leighton Buzzard is of major concern to local residents and development could potentially cause noise and air pollution from traffic congestion. As Leighton Buzzard has been identified as a growth area in the Milton Keynes and South Midlands Sub Regional Strategy, traffic congestion is likely to increase even without further mineral development.</p> <p><b>MITIGATION</b> It is unclear how this potential impact could be mitigated other than by avoiding the selection of sites that will exacerbate this problem and ensuring that HGV routes avoid Leighton Buzzard. The minerals strategy should be integrated with the preparation of the Local Development documents for this area with the aim of avoiding potential cumulative effects.</p>			
Waste				
<ul style="list-style-type: none"> <li>• Change the amount of waste produced per tonne of mineral?</li> <li>• Include actions that change the mix of aggregates produced between primary materials and secondary / recycled materials?</li> </ul>	The further development of sites will not affect the amount of waste produced per tonne of mineral.	Neutral		
Climate change				
<ul style="list-style-type: none"> <li>• Reduce the distance that minerals are transported?</li> </ul>	The mineral would be transported a relatively short distance to the processing facility.	G	G	G
Soils and geology				
<ul style="list-style-type: none"> <li>• Include actions that improve or remove geodiversity?</li> </ul>	Development will have a neutral effect on these criteria.	Neutral		

Option: Specialist Silica Sand				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The strategy for silica sand is that further reserves of silica sand will only be allocated where there is a demonstrable need for the product, and this need cannot be met from other existing sites in the plan area, or from alternative materials. The likely implications of the strategy (in association with the sequential test) is that development will be focused on existing sites. Therefore, the assessment focuses on the environmental sensitivities and other sustainability The effects of concentrating development in Heath and Reach / Leighton Buzzard. It is not an assessment of potential sites although the information available on sites raised at the issues and options stage has been used in the assessment. As the assessment does not discuss particular sites, it is difficult to assess to the level of detail where the duration, frequency and reversibility can be assessed. This can be done with more certainty at the site assessment stage.		Short	Medium	Long
<ul style="list-style-type: none"> <li>Include actions that help to protect mineral reserves (i.e. through the imposition of Mineral Consultation Areas or Mineral Safeguarding Areas).</li> </ul>				
Employment and economy				
<ul style="list-style-type: none"> <li>Include actions that change the number of people directly employed in the minerals industry?</li> </ul>	Allocating sites will help to safeguard jobs.	G	G	G
Potential cumulative effects: A large part of the development of the Greensand Ridge has occurred in this area historically. This has a large cumulative effect on the residents which will intensify if all the development in the Greensand Ridge continues.				

## Building Stone

Option: Building Stone				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The building stone strategy effectively consists of one site, Bury Farm. Therefore, the assessment of this site draws heavily on the assessment for Bury Farm.		Short	Medium	Long
<b>Biodiversity and earth science</b>				
<p>To what extent are land based resource blocks constrained by designated areas e.g. National Nature Reserves, SSSIs, and SACs etc.?</p> <p>To what extent does the proposed site threaten the qualities of designated areas?</p>	<p>Stevington Marsh SSSI is located nearby which includes sensitive wetland communities. Natural England has stated that they would not wish to see any impacts upon this site. The site is also adjacent to the River Ouse CWS. According to the Beds Wildlife Trust other populations are known to be present on the site.</p> <p>The nature of the extraction on site, however, is relatively small scale and will have limited spatial extent with stone being dug from the rock face. The site will not affect the water table and no blasting will take place. No HGVs will be used to transport the rock.</p>	O	O	G
<b>Archaeology and cultural heritage</b>				
<p>To what extent are land based resource blocks constrained by designated sites or Conservation Areas?</p> <p>To what extent does the proposed site threaten the qualities of designated areas?</p>	<p>All of this site is within an Area of Archaeological Interest. Limestone quarrying at Pavenham could provide stone for heritage purposes in buildings and for dry stone walling – however, its suitability is yet to be demonstrated.</p> <p><u>MITIGATION</u> The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site. This should be undertaken at the planning application stage.</p>	O	O	O
<b>Landscape</b>				
<p>To what extent are land based resource blocks constrained by designated areas e.g. National Parks etc.?).</p> <p>To what extent does the proposed site threaten the qualities of designated areas?</p>	<p>Part or all of this site lies within an Area of Great Landscape Value. The site is within landscape character type 3: Limestone river valley with open water. This area has a strong sense of character as recognised by the AGLV designation.</p> <p>The spatial extent of this impact may be widespread as the site could be visible from a large area. However, the small scale nature of the operation could provide some mitigation. The effect would last as long as the site is worked and would be reversible if the site were restored to a landscape type which suits for the</p>	R	R	O

Option: Building Stone				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The building stone strategy effectively consists of one site, Bury Farm. Therefore, the assessment of this site draws heavily on the assessment for Bury Farm.		Short	Medium	Long
	character of the area.			
Land take				
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land?	The site does not conflict with areas of best and most versatile agricultural land.	G	G	G
To what extent do land based resource blocks help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).	This is a small site serving local needs.	Neutral		
Human health and amenity				
What level of nuisance or effect on quality of life or human health (for both existing or planned residential areas) is likely to occur as a result of the proposed site?	This site is more remote from communities than other sites and is a relatively small site. See below for details regarding transport impacts.	G	G	G
Transportation				
Which mode of transport (rail, road or water) is most likely to be used in the transportation of the aggregate?  Is the site near to the strategic highway network?	Road transportation is the most likely form of transportation. Access to this site would mean that vehicles would need to use the local roads before they can access the strategic roads, having impacts upon noise and safety. The effect would last as long as the site is worked and would be reversible once the site is closed. The fact that HGVs will not be used to transport stone (LGVs or agricultural trailers will be used) will minimise this impact.  Footpath Pavenham 7 bisects the site. This path gives access to the riverside and Radwell. It forms part of a locally promoted route and the long distance Ouse Valley Way. The original ground levels should be restored once the quarry is worked so there will be no long term effect.	O	O	G
Extent of remaining landbank				
To what extent does the proposed site minimise impacts on existing landbanks? i.e. contribute to landbanks through reserves ( <i>this may be an issue related to silica sand only</i> )	N/A			

Option: Building Stone				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The building stone strategy effectively consists of one site, Bury Farm. Therefore, the assessment of this site draws heavily on the assessment for Bury Farm.		Short	Medium	Long
Conservation and protection of water resources				
To what extent are water resources used or impacted upon for the extraction of the aggregate?	Part or all of this site contains flood zone areas and lies within a Nitrate Vulnerable Zone.	O	O	G
Waste management				
How much waste is likely to be produced per tonne of aggregate? <i>(this may be an issue related to silica sand only)</i>	N/A			
Other planning considerations				
To what extent are resource blocks affected by other constraints e.g. CAA Guidance CAP680?	The site is not affected by an airfield safeguarding zone. No other constraints have been identified.	G	G	G
Potential cumulative effects: this is a small site serving local needs. Therefore, it has been judged that there will be no cumulative effects.				

## Chalk and Brickclay

Option: Chalk / Brickclay				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: No further reserves have been allocated in the plan. This assessment is effectively assessing a scenario in which no new sites are developed.		Short	Medium	Long
<b>Biodiversity</b>				
<ul style="list-style-type: none"> <li>• Include actions that directly or indirectly affect Natura 2000 sites, SSSIs or other designated sites?</li> <li>• Include actions that will cause habitat loss or fragmentation?</li> <li>• Include actions that help to reach targets or compromise targets of BAPs?</li> <li>• Include actions to ensure restoration to biodiversity is a priority where appropriate?</li> </ul>	There are large permitted reserves of chalk and brickclay so the plan will not allocate any further reserves. The strategy will register as neutral against most criteria.	Neutral		
<b>Archaeology and cultural heritage</b>				
<ul style="list-style-type: none"> <li>• Include actions that could impact upon remains, sites and monuments valued for their cultural heritage?</li> <li>• Include actions to improve education and interpretation of archaeological remains?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
<b>Landscape</b>				
<ul style="list-style-type: none"> <li>• Cause changes to designated areas which threatens the reason for their designation?</li> <li>• Cause changes to the landscape / that (in themselves or cumulatively with other proposals) are completely at variance with the character of the area?</li> <li>• Change the number of people that are affected by the visual impact of minerals development?</li> <li>• Include actions which will enhance landscape through restoration?</li> <li>• Change the amount of accessible greenspace available?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		

Option: Chalk / Brickclay				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: No further reserves have been allocated in the plan. This assessment is effectively assessing a scenario in which no new sites are developed.		Short	Medium	Long
Land use				
<ul style="list-style-type: none"> <li>To what extent does the option help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Air quality and noise				
<ul style="list-style-type: none"> <li>Change the amount of pollution caused by mineral working?</li> <li>Encourage suitable mitigation measures?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Human health, population and social inclusion				
<ul style="list-style-type: none"> <li>Cause a change in the number of people directly affected by mineral working (living in close proximity to a mineral site or an access route) whose impact cannot be mitigated?</li> <li>Cause a cumulative impact on certain communities (either through permitting more reserves affecting the same community or by lengthening the time period of permission)?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Economic growth – minerals and material assets				
<ul style="list-style-type: none"> <li>Help ensure that a sustainable contribution is made to the sub regional aggregate apportionment?</li> </ul>	Chalk and brickclay do not count towards the sub regional aggregate apportionment. In addition, there are enough reserves sufficient for foreseeable needs and well beyond the plan period.	Neutral		
Conservation and protection of water resources				
<ul style="list-style-type: none"> <li>Include actions that could increase / reduce the risk of effects on groundwater and surface water quality and quantity?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		

Option: Chalk / Brickclay				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: No further reserves have been allocated in the plan. This assessment is effectively assessing a scenario in which no new sites are developed.		Short	Medium	Long
<ul style="list-style-type: none"> <li>Include measures that could increase / decrease the potential for flooding?</li> </ul>				
Transport				
<ul style="list-style-type: none"> <li>Cause a change in traffic flows or the nature of traffic (an increase in HGVs for example) that affects communities or areas valued for their environmental importance?</li> <li>Include actions to help to protect important distribution network nodes (e.g. rail facilities).</li> <li>Include actions that would encourage a shift from road freight to rail freight?</li> <li>Include actions that change mileage travelled per tonne?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Waste				
<ul style="list-style-type: none"> <li>Change the amount of waste produced per tonne of mineral?</li> <li>Include actions that change the mix of aggregates produced between primary materials and secondary / recycled materials?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Climate change				
<ul style="list-style-type: none"> <li>Reduce the distance that minerals are transported?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Soils and geology				
<ul style="list-style-type: none"> <li>Include actions that improve or remove geodiversity?</li> <li>Include actions that help to protect mineral reserves (i.e. through the imposition of Mineral Consultation Areas or Mineral Safeguarding Areas).</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		

Option: Chalk / Brickclay				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: No further reserves have been allocated in the plan. This assessment is effectively assessing a scenario in which no new sites are developed.				Short Medium Long
Employment and economy				
<ul style="list-style-type: none"> <li>Include actions that change the number of people directly employed in the minerals industry?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Potential cumulative effects: None				

## Fullers Earth

Option: Fullers Earth				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The plan has maintained a presumption against fuller's earth. Fuller's earth is now unlikely to be economically viable so no new sites will be allocated.		Short	Medium	Long
Biodiversity				
<ul style="list-style-type: none"> <li>• Include actions that directly or indirectly affect Natura 2000 sites, SSSIs or other designated sites?</li> <li>• Include actions that will cause habitat loss or fragmentation?</li> <li>• Include actions that help to reach targets or compromise targets of BAPs?</li> <li>• Include actions to ensure restoration to biodiversity is a priority where appropriate?</li> </ul>	The strategy will register as neutral against most criteria as no further sites will be developed.	Neutral		
Archaeology and cultural heritage				
<ul style="list-style-type: none"> <li>• Include actions that could impact upon remains, sites and monuments valued for their cultural heritage?</li> <li>• Include actions to improve education and interpretation of archaeological remains?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Landscape				
<ul style="list-style-type: none"> <li>• Cause changes to designated areas which threatens the reason for their designation?</li> <li>• Cause changes to the landscape / that (in themselves or cumulatively with other proposals) are completely at variance with the character of the area?</li> <li>• Change the number of people that are affected by the visual impact of minerals development?</li> <li>• Include actions which will enhance landscape through restoration?</li> <li>• Change the amount of accessible greenspace available?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		

Option: Fullers Earth				
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
Assumptions: The plan has maintained a presumption against fuller's earth. Fuller's earth is now unlikely to be economically viable so no new sites will be allocated.		Short	Medium	Long
Land use				
<ul style="list-style-type: none"> <li>To what extent does the option help achieve the objectives of the wider development framework (i.e. contribution to amenity, landscape, biodiversity objectives through restoration).</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Air quality and noise				
<ul style="list-style-type: none"> <li>Change the amount of pollution caused by mineral working?</li> <li>Encourage suitable mitigation measures?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Human health, population and social inclusion				
<ul style="list-style-type: none"> <li>Cause a change in the number of people directly affected by mineral working (living in close proximity to a mineral site or an access route) whose impact cannot be mitigated?</li> <li>Cause a cumulative impact on certain communities (either through permitting more reserves affecting the same community or by lengthening the time period of permission)?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		
Economic growth – minerals and material assets				
<ul style="list-style-type: none"> <li>Help ensure that a sustainable contribution is made to the sub regional aggregate apportionment?</li> </ul>	Fuller's earth do not count towards the sub regional aggregate apportionment.	Neutral		
Conservation and protection of water resources				
<ul style="list-style-type: none"> <li>Include actions that could increase / reduce the risk of effects on groundwater and surface water quality and quantity?</li> <li>Include measures that could increase / decrease the</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral		

Option: Fullers Earth			
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect	
Assumptions: The plan has maintained a presumption against fuller's earth. Fuller's earth is now unlikely to be economically viable so no new sites will be allocated.		Short	Medium Long
potential for flooding?			
Transport			
<ul style="list-style-type: none"> <li>• Cause a change in traffic flows or the nature of traffic (an increase in HGVs for example) that affects communities or areas valued for their environmental importance?</li> <li>• Include actions to help to protect important distribution network nodes (e.g. rail facilities).</li> <li>• Include actions that would encourage a shift from road freight to rail freight?</li> <li>• Include actions that change mileage travelled per tonne?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral	
<ul style="list-style-type: none"> <li>• Waste</li> </ul>			
<ul style="list-style-type: none"> <li>• Change the amount of waste produced per tonne of mineral?</li> <li>• Include actions that change the mix of aggregates produced between primary materials and secondary / recycled materials?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral	
Climate change			
<ul style="list-style-type: none"> <li>• Reduce the distance that minerals are transported?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral	
Soils and geology			
<ul style="list-style-type: none"> <li>• Include actions that improve or remove geodiversity?</li> <li>• Include actions that help to protect mineral reserves (i.e. through the imposition of Mineral Consultation Areas or Mineral Safeguarding Areas).</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral	
Employment and economy			

Option: Fullers Earth		
SA Objective and Criteria	Impact of the option (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect
Assumptions: The plan has maintained a presumption against fuller's earth. Fuller's earth is now unlikely to be economically viable so no new sites will be allocated.		<b>Short Medium Long</b>
<ul style="list-style-type: none"> <li>Include actions that change the number of people directly employed in the minerals industry?</li> </ul>	The strategy will have no effect on this criterion as no sites will be developed.	Neutral
Potential cumulative effects: None		