

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

**Sustainability Appraisal of the Site  
Allocations Preferred Options**

**Appendix 2: Appraisal Matrices**

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## Concreting Aggregate Sites

### Sequential Test 1: Site Extensions

Concreting Aggregate: Sequential Test 1: Site Extensions Site: MD12, Land at Octagon Farm North				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<b>Biodiversity</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>There are no direct land take effects on designated areas. The BCC ecologist has indicate that this site falls within / very close to the floodplain of the River Ouse. This is a priority area for the creation of wetland habitat and long term restoration plans could provide a benefit. The site would have a positive long term benefit provided mitigation measures were put in place to limit short term impacts.</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>The site is no constrained by designated sites or Conservation Areas and does not threaten the qualities of a designated area. All of the site is in an Area of Archaeological Interest. The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.</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>The site is close to proposals for a river park as an extension to Priory Country Park. This could be beneficial with appropriate restoration.</p> <p>The site is not constrained by designated areas and does not threaten the qualities of a designated area.</p> <p>The site is within the national countryside character area 88: Bedfordshire and Cambridgeshire Claylands and the landscape character designation of Type 4: Clay River Valleys. The condition of the landscape is judged to be poor. The strategy for the area is to improve features of the landscape that evoke a strong sense of place such as areas of pasture which help to distinguish the valleys from the adjacent vales. The wetland character of the area also needs to be improved along with the ecological value of the river corridors. Minerals development can</p>	O	O	G

Concreting Aggregate: Sequential Test 1: Site Extensions Site: MD12, Land at Octagon Farm North				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	help to do this with sensitive restoration.			
Land take				
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land?	The site is not classed as 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).	With appropriate restoration the site could contribute to Bedford River Valley park (see BBC LP Policy NE23). It is also a priority area for wetland creation.	O	O	G
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?	The site is also near a navigable river is used for recreation purposes. If numerous sites were developed, it could affect this. These effects are likely to last as long as the development lasts.	R	R	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. As with the site at Octagon Farm South this site again benefits from being strategically well located in close proximity to the A421. This site is however, closer to residential development than the Land at Octagon Farm South with the South eastern part of Goldington in close proximity. It is assumed access would via the existing arrangement. There is also a need to protect the railway.  The effect would last as long as the site is worked and would be reversible once the site is closed.	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 (this may be an issue related to silica sand only)	N/A			
Conservation and protection of water resources				

**Concreting Aggregate: Sequential Test 1: Site Extensions  
Site: MD12, Land at Octagon Farm North**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
To what extent are water resources used or impacted upon for the extraction of the aggregate?	Parts of this site are within Flood Zones 3 (High Risk), 2 (Low to medium risk) and 1 (Little or no Risk) of the Environment Agency's Flood Map. The source of the flooding is from the main River Great Ouse. The site is also in the Bedfordshire Internal Drainage Board area. Consultation responses indicated that the site could provide flood alleviation benefits further downstream. The nature of this impact is uncertain and would require further investigation.	O	O	.O
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

**Concreting Aggregate: Sequential Test 1: Site Extensions  
Site: MD28, Land at Brooklands Farm**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<b>Biodiversity</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Nature Reserves, SSSIs, and SACs etc.?	There is no direct land take from designated wildlife sites. However, consultation has indicated that there are trees and woodlands issues with this site and potential for water voles and otters to be colonising the site.	O	O	G
To what extent does the proposed site threaten the qualities of designated areas?	The site has also been identified as a wetland opportunity in BAP.  The spatial extent of this impact would depend upon mitigation. The effect would last as long as the site is worked and would be reversible if the site were restored to wetland habitat.			
<b>Archaeology and cultural heritage</b>				
To what extent are land based resource blocks constrained by designated sites or Conservation Areas?	The site is not constrained by designated sites or Conservation Areas and does not threaten the qualities of a designated area. However, about 50% of this site is in an Area of Archaeological Interest and this is part of a wide area of pre-Roman archaeology to the west of Biggleswade. There is also a medieval castle nearby. The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.	O	O	O
To what extent does the proposed site threaten the qualities of designated areas?				
<b>Landscape</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Parks etc.?).	The site is not constrained by designated areas and does not threaten the qualities of a designated area. The site is within landscape character designation of Type 4: Clay River Valleys. The condition of the landscape is judged to be poor. The strategy for the area is to improve features of the landscape that evoke a strong sense of place such as areas of pasture which help to distinguish the valleys from the adjacent vales. The wetland character of the area also needs to be improved along with the ecological value of the river corridors. Minerals development can help to do this with sensitive restoration. However, there is a concern in the local community (voiced at the workshop in Biggleswade) that more wetlands would unbalance the local environment. Long term restoration strategies need to be developed with the local community.	O	O	O
To what extent does the proposed site threaten the qualities of designated areas?				

**Concreting Aggregate: Sequential Test 1: Site Extensions  
Site: MD28, Land at Brooklands Farm**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	The spatial extent of this impact may be widespread as the site could be visible from a large area. 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 character of the area.			
Land take				
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land?	This site impacts upon Grade 1 and Grade 2, best and most versatile agricultural land.	R	R	R
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).	The site is within the Ivel and Ouse Countryside Project Area (see MWLP) and given appropriate restoration could contribute to the project aims. This is also a BAP wetland opportunity area.	O	O	G
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?	The site may cause nuisance to residential developments and would cause Brooklands Farm to be landlocked. This negative effect could be long term depending on the after use of the site.	R	R	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. The HA state that they would need to be satisfied that the site would not be detrimental to the flow of traffic on trunk roads. The site is located adjacent to the A1 and would have access from the B568, so has good access to the strategic network. There is an established HGV access from Broom Quarry. However, there is also a residential development in this location and consideration would need to be given towards any traffic, noise and safety implications, particularly from traffic turning westbound.  Old Warden Footpath number 1 and 3 would be affected.  The effect would last as long as the site is worked and would be reversible once	O	O	G

**Concreting Aggregate: Sequential Test 1: Site Extensions  
Site: MD28, Land at Brooklands Farm**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	the site is closed.			
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			
Conservation and protection of water resources				
To what extent are water resources used or impacted upon for the extraction of the aggregate?	There are flood risk zones within the site and the site is above a major aquifer. The nature of this impact is uncertain and would require further investigation.	O	O	O
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 within the safeguarding zone for RAF Henlow. No other constraints have been identified.	R	R	O

**Concreting Aggregate: Sequential Test 1: Site Extensions  
Site: MD36, Ivel Farm, Sandy**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<b>Biodiversity</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Nature Reserves, SSSIs, and SACs etc.?  To what extent does the proposed site threaten the qualities of designated areas?	The site is adjacent to the River Ivel CWS and could have impacts on Biggleswade Common CWS which is adjacent to the site. Protected species recorded in the area include otter and water vole.  The BCC ecologist has indicated that MD36 is an extension of an existing quarry that has a restoration in hand to a range of biodiversity habitats. It is also within an important opportunity area for wetland priority habitat. Appropriate restoration could then contribute to local and regional wetland targets. However, there would need to be mitigation to ensure that this long term benefit is not outweighed by short term damage.	O	O	G
<b>Archaeology and cultural heritage</b>				
To what extent are land based resource blocks constrained by designated sites or Conservation Areas?  To what extent does the proposed site threaten the qualities of designated areas?	The site is not constrained by designated sites or Conservation Areas and does not threaten the qualities of a designated area. Most of this site is an Area of Archaeological Interest. The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.	O	O	O
<b>Landscape</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Parks etc.?).  To what extent does the proposed site threaten the qualities of designated areas?	The site is not constrained by designated areas and does not threaten the qualities of a designated area. The site is within landscape character designation of Type 4: Clay River Valleys. The condition of the landscape is judged to be poor. The strategy for the area is to improve features of the landscape that evoke a strong sense of place such as areas of pasture which help to distinguish the valleys from the adjacent vales. The wetland character of the area also needs to be improved along with the ecological value of the river corridors. Minerals development can help to do this with sensitive restoration. However, there is a concern in the local community (voiced at the workshop in Biggleswade) that more wetlands would unbalance the local environment. Long term restoration strategies need to be developed with the local community.	O	O	O

**Concreting Aggregate: Sequential Test 1: Site Extensions  
Site: MD36, Ivel Farm, Sandy**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	The spatial extent of this impact may be widespread as the site could be visible from a large area. 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 character of the area.			
Land take				
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land?	This site impacts upon Grade 1 and 2, best and most versatile agricultural land.	R	R	R
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).	The site is within the Ivel and Ouse Countryside Project Area (see MWLP) and given appropriate restoration could contribute to the project aims. The site is also within a BAP wetland opportunity area.	O	O	G
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?	The site may cause nuisance to residential developments adjacent to the site. These effects are likely to last as long as the development lasts.	O	O	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. The HA state that they would need to be satisfied that the site would not be detrimental to the flow of traffic on trunk roads. This site is well located next to the A1 but would probably take access from the road to the superstore. However, further consideration must be given to this site due its location next to residential developments and the noise safety and traffic implications a mineral site on this site will have on local residents.  At completion a possible new footpath including riverside length and connection to permissive path further north could be provided.  The effect would last as long as the site is worked and would be reversible once	O	O	G

Concreting Aggregate: Sequential Test 1: Site Extensions Site: MD36, Ivel Farm, Sandy				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	the site is closed.			
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			
Conservation and protection of water resources				
To what extent are water resources used or impacted upon for the extraction of the aggregate?	Parts of this site are within Flood Zones 3 (High Risk), 2 (Low to medium risk) and 1 (Little or no Risk) of the Environment Agency's Flood Map. The source of the flooding is from the main River Ivel. The nature of this impact is uncertain and would require further investigation.	O	O	O
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

## Sequential Test 2: Satellite Sites

Concreting Aggregate: Sequential Test 2: Satellite Sites Site: MD3, Willington Lock				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<b>Biodiversity</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>Part of this site contains the County Wildlife Site, Blunham Disused Railway and EN has concerns about the impact on this site. Bedfordshire Wildlife Trust also feel that the site might have a significant impact on River Great Ouse CWS and Great Barford Pit CWS.</p> <p>The BCC ecologist has indicated that this site falls within the floodplain of the River Ouse. This is a priority area for the creation of wetland habitat. Although this site lies within a CWS, damage might conceivably be avoided or compensated for as only a small section of the CWS might be lost. However, care must be taken to ensure that this site would not lead to the loss of priority habitat or species. There is the potential to enhance the CWS over the long term through the use of a carefully designed restoration programme.</p>	R	R	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>The site is not constrained by designated sites or Conservation Areas and does not threaten the qualities of a designated area. There is an Area of Archaeological interest adjacent to / slightly overlapping the site. The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.</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>The site is not constrained by designated areas and does not threaten the qualities of a designated area.</p> <p>The site is within the national countryside character area 88: Bedfordshire and Cambridgeshire Claylands and the landscape character designation of Type 4: Clay River Valleys. The condition of the landscape is judged to be poor. The strategy for the area is to improve features of the landscape that evoke a strong sense of place such as areas of pasture which help to distinguish the valleys from the adjacent vales. The wetland character of the area also needs to be improved</p>	O	O	G

Concreting Aggregate: Sequential Test 2: Satellite Sites Site: MD3, Willington Lock				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	<p>along with the ecological value of the river corridors. Minerals development can help to do this with sensitive restoration.</p> <p>The spatial extent of this impact may be widespread as the site could be visible from a large area. 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 the character of the area, in this case wetland.</p>			
Land take				
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land?	This site impacts upon Grade 1 best and most versatile agricultural land.	R	R	R
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).	With appropriate restoration the site could contribute to Bedford River Valley park (see BBC LP Policy NE23), the aims of Forest of Marston Vale (see MWLP appendix 4) and the Ivel and Ouse Countryside Project – see MWLP Appx 5. As already indicated, this is a priority area for the creation of wetland habitat. Although this site lies within a CWS, damage might conceivably be avoided or compensated for as only a small section of the CWS might be lost.	O	O	G
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?	The site is also near a navigable river is used for recreation purposes. If numerous sites were developed, it could affect this. These effects are likely to last as long as the development lasts.	R	R	G
Transportation				
Which mode of transport (rail, road or water) is most likely to be used in the transportation of the aggregate?	Sustrans Route 51 and proposed Great North Cycle Route run through the area – extraction could potentially provide opportunities for improvement even if this involved temporary diversion.	R	R	G

**Concreting Aggregate: Sequential Test 2: Satellite Sites  
Site: MD3, Willington Lock**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
Is the site near to the strategic highway network?	<p>The Bedfordshire Railway Transport Association would like to see full re-opening of the East West rail link serving Willington. This would mean that a large amount of quarrying material could be taken by rail. Consultees suggest that the cost and feasibility of this needs investigation. However, sand &amp; gravel sites are intended to serve local markets and rail is unlikely to be a practical solution.</p> <p>This site is in close proximity to residential developments and access to this site would mean that vehicles would have to pass through either Great Barford or Willington to access the strategic road network. This would potentially give traffic and safety implications particularly on the A603 which at points can be quite narrow and dangerous. It would also have negative impacts on the local environment and residents. The Highways Authority is currently improving the A421 by realigning the carriage way to the west of the current A421 and consideration would need to be given to the impact this may have on the use of this strategic road to access the local roads.</p> <p>The effect would last as long as the site is worked and would be reversible once the site is closed.</p>			
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			
Conservation and protection of water resources				
To what extent are water resources used or impacted upon for the extraction of the aggregate?	The site is within Flood Zones 3 of the River Ouse on the Environment Agency's Flood Map. Is within the Bedfordshire Internal Drainage Board area. There have been indications that the site could provide flood alleviation benefits further downstream. The nature of this impact is uncertain and would require further investigation.	O	O	O
Waste management				

**Concreting Aggregate: Sequential Test 2: Satellite Sites  
Site: MD3, Willington Lock**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
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

Concreting Aggregate: Sequential Test 2: Satellite Sites Site: MD8, Willowhill Farm, Moggerhanger				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<b>Biodiversity</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Nature Reserves, SSSIs, and SACs etc.?  To what extent does the proposed site threaten the qualities of designated areas?	There is no direct land take issue regarding designated sites. There is one CWS adjacent to the site. The BCC ecologist has indicate that this site falls within / very close to the floodplain of the River Ouse. This is a priority area for the creation of wetland habitat.  Care would need to be taken to ensure that long term gained in not offset by short term loss.	O	O	G
<b>Archaeology and cultural heritage</b>				
To what extent are land based resource blocks constrained by designated sites or Conservation Areas?  To what extent does the proposed site threaten the qualities of designated areas?	The site is no constrained by designated sites or Conservation Areas and does not threaten the qualities of a designated area The majority of the site is in an Area of Archaeological interest. The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.	O	O	O
<b>Landscape</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Parks etc.?).  To what extent does the proposed site threaten the qualities of designated areas?	The site is not constrained by designated areas and does not threaten the qualities of a designated area. The site is within the national countryside character area 88: Bedfordshire and Cambridgeshire Claylands and the landscape character designation of Type 4: Clay River Valleys. The condition of the landscape is judged to be poor. The strategy for the area is to improve features of the landscape that evoke a strong sense of place such as areas of pasture which help to distinguish the valleys from the adjacent vales. The wetland character of the area also needs to be improved along with the ecological value of the river corridors. Minerals development can help to do this with sensitive restoration. The Ramblers Association feel that this site would be very visible from the high ground of the Greensand Ridge.  The spatial extent of this impact may be widespread as the site could be visible from a large area. The effect would last as long as the site is worked and would	O	O	G

**Concreting Aggregate: Sequential Test 2: Satellite Sites  
Site: MD8, Willowhill Farm, Moggerhanger**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	be reversible if the site were restored to a landscape type which suits for the character of the area.			
Land take				
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land?	This site impacts upon Grade 1 and Grade 2 best and most versatile agricultural land.	R	R	R
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 site could contribute to the aims of Marston Vale (see MWLP appendix 4) and is a priority area for the creation of wetland habitat.	O	O	G
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?	The site may cause nuisance to residential developments at Moggerhanger. These effects are likely to last as long as the development lasts.	R	R	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. There are strategic highways issues with this site. Although this site is in fairly close proximity to the A421 and the A1, this site is near to residential developments and access would mean that vehicles would have to pass in close proximity to Willington or Moggerhanger on the A603 to access these strategic routes. Further consideration needs to be given to the amount of traffic using the A603 as this route can be narrow in some points and would create safety implications for local communities and existing traffic. As with other sites, access implications from the strategic network are not clear due to the proposed improvements by the highways agency on the A421.  A bridleway falls within this site. However, this is a good opportunity to resolve the dead end nature of Willington Bridleway 8. It could be extended NE to the Sustrans cycleway.	O	O	G

Concreting Aggregate: Sequential Test 2: Satellite Sites Site: MD8, Willowhill Farm, Moggerhanger				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	The effect would last as long as the site is worked and would be reversible once the site is closed.			
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			
Conservation and protection of water resources				
To what extent are water resources used or impacted upon for the extraction of the aggregate?	Parts of this site are within Flood Zones 3 (High Risk), 2 (Low to medium risk) and 1 (Little or no Risk) of the Environment Agency's Flood Map. The site is partly in the Bedfordshire Internal Drainage Board area. The nature of this impact is uncertain and would require further investigation.	O	O	.O
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

**Concreting Aggregate: Sequential Test 2: Satellite Sites  
Site: MD10, Bridge Farm, Great Barford**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<b>Biodiversity</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Nature Reserves, SSSIs, and SACs etc.?	There are no direct land take effects on designated areas. However, the site is adjacent to Barford Pit County Wildlife Site and there may be an impact on ground levels.	O	O	G
To what extent does the proposed site threaten the qualities of designated areas?	The BCC ecologist has indicate that this site falls within / very close to the floodplain of the River Ouse. This is a priority area for the creation of wetland habitat and restoration of the site to wetland would be a benefit. Care would need to be taken to ensure that long term gained in not offset by short term loss.			
<b>Archaeology and cultural heritage</b>				
To what extent are land based resource blocks constrained by designated sites or Conservation Areas?	About 75% of the site is in an Area of Archaeological interest. There is also a scheduled monument adjacent to the site in the South. The site is also close to Barford Conservation Area. If the site were developed mitigation would be required to preserve any remains found. The nature of the impact depends upon this mitigation.	R	R	R
To what extent does the proposed site threaten the qualities of designated areas?				
<b>Landscape</b>				
To what extent are land based resource blocks constrained by designated areas e.g. National Parks etc.?).	The site is not constrained by designated areas and does not threaten the qualities of a designated area.	O	O	G
To what extent does the proposed site threaten the qualities of designated areas?	The site is within the national countryside character area 88: Bedfordshire and Cambridgeshire Claylands and the landscape character designation of Type 4: Clay River Valleys. The condition of the landscape is judged to be poor. The strategy for the area is to improve features of the landscape that evoke a strong sense of place such as areas of pasture which help to distinguish the valleys from the adjacent vales. The wetland character of the area also needs to be improved along with the ecological value of the river corridors. Minerals development can help to do this with sensitive restoration.			
<b>Land take</b>				

**Concreting Aggregate: Sequential Test 2: Satellite Sites  
Site: MD10, Bridge Farm, Great Barford**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land?	This site impacts upon Grade 1 and Grade 2 best and most versatile agricultural land.	R	R	R
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 priority area for the creation of wetland habitat and restoration of the site to wetland would be a benefit. Care would need to be taken to ensure that long term gained in not offset by short term loss.	O	O	G
<b>Human health and amenity</b>				
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?	The site may cause nuisance to residential developments at Great Barford, bringing development closer to Great Barford and in particular the two schools in Great Barford. The site is also near a navigable river is used for recreation purposes. If numerous sites were developed, it could affect this. These effects are likely to last as long as the development lasts.	R	R	G
<b>Transportation</b>				
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. The HA state that they would need to be satisfied that the site would not be detrimental to the flow of traffic on trunk roads. As with other sites previously discussed the main issues associated with this site are the proximity to residential areas. This site has good strategic transport links with the newly opened A421 Great Barford Bypass but appropriate routing strategies are needed to avoid site traffic passing through Great Barford.  Great Barford footpaths 4 and 21 are both affected by the site and will be subject to disruption or diversion during the course of the site activity. There is an opportunity to provide additional public access at final restoration of this site.  Ouse Valley Way long distance walk passes along the southern/eastern boundary of the site and would need to be incorporated into excavation and restoration plans.  The effect would last as long as the site is worked and would be reversible once	O	O	G

Concreting Aggregate: Sequential Test 2: Satellite Sites Site: MD10, Bridge Farm, Great Barford				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	the site is closed.			
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			
Conservation and protection of water resources				
To what extent are water resources used or impacted upon for the extraction of the aggregate?	Parts of this site are within Flood Zones 3 (High Risk), 2 (Low to medium risk) and 1 (Little or no Risk) of the Environment Agency's Flood Map. The source of the flooding is from the main River Great Ouse. The site is also in the Bedfordshire Internal Drainage Board area. Consultation responses indicated that the site could provide flood alleviation benefits further downstream. The nature of this impact is uncertain and would require further investigation.	O	O	.O
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

### Sequential Test 3: New Sites

Concreting Aggregate: Sequential Test 3: New Sites Site: MD15, Land south of Broom village				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
<b>Biodiversity</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>The site bounds the River Ivel and Hiz CWS and also the River Flit CWS. Care must be taken to avoid impacts on these sites. Public consultation has raised concern regarding trees which were planted at the intersection of field boundaries shortly after the enclosure at Southill in the late 18<sup>th</sup> century. These appear on the estate maps and still exist today.</p> <p>The Beds RCC feel that this is a site which could result in enhancements to the biodiversity and / or amenity value of the area given good restoration.</p> <p>The spatial extent of this impact could be widespread, its probability lessened by mitigation. The effect would last as long as the site is worked and would be reversible if the site were restored well.</p>	R	R	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 and the site adjoins Ivel navigation – former canal with Industrial heritage and recent commemorative planting for Whitbread Estates. The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.</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>The site is not constrained by designated areas and does not threaten the qualities of a designated area. The site is within the landscape character designation of Type 4: Clay River Valleys. The condition of the landscape is judged to be poor. The strategy for the area is to improve features of the landscape that evoke a strong sense of place such as areas of pasture which help to distinguish the valleys from the adjacent vales. The wetland character of the area also needs to be improved along with the ecological value of the river corridors. Minerals development can help to do this with sensitive restoration. However, there is a concern in the local community (voiced at the workshop in</p>	O	O	O

Concreting Aggregate: Sequential Test 3: New Sites Site: MD15, Land south of Broom village				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	Biggleswade) that more wetlands would unbalance the local environment. Long term restoration strategies need to be developed with the local community.  The spatial extent of this impact may be widespread as the site could be visible from a large area. 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 character of the area.			
Land take				
To what extent do land based resource blocks conflict with areas of best and most versatile agricultural land.	Most of this site is Grade 1 and Grade 2, best and most versatile agricultural land. However a more detailed ALC has confirmed that large parts of the site are class 3b. Small areas of the best and most versatile agricultural land do exist within the site.	O	O	O
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).	The site is within the Ivel and Ouse Countryside Project Area (see MWLP) and given appropriate restoration could contribute to the project aims.	O	O	G
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?	The site may cause nuisance to residential developments, mainly Stanford, Broom and Langford. These effects are likely to last as long as the development lasts.	R	R	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.  Although the Land at Broom Quarry site is located well for access to the A1 it is also situated close to residential developments. Any vehicles using this site would need to access it using local roads creating traffic management and safety implications for residents in local villages. .  Southill Footpath 6 and 7 are affected. There is a the potential to provide new	R	R	G

**Concreting Aggregate: Sequential Test 3: New Sites**  
**Site: MD15, Land south of Broom village**

SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	public access along SE and eastern boundaries to link the Navigator's Way to the Kingfisher Way long distance walk.  The effect would last as long as the site is worked and would be reversible once the site is closed.			
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			
Conservation and protection of water resources				
To what extent are water resources used or impacted upon for the extraction of the aggregate?	This site impacts upon flood zone areas and the site is above a major aquifer. The nature of this impact is uncertain and would require further investigation.	O	O	O
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 within the safeguarding zone for RAF Henlow. No other constraints have been identified.	R	R	O

## Silica Sand Sites

Silica Sand Site: MD21, Land East of A4146 Billington				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		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>The site is not constrained by designated areas. EN are keen to ensure that the proposal does not have any impacts on the sensitive wetland SSSI of Nares Gladley Marsh SSSI located in the vicinity. This will need further investigation if the site is taken forward.</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>The site is not constrained by designated sites or Conservation Areas and does not threaten the qualities of a designated area.</p> <p>The site is adjacent to an Area of Archaeological Interest. The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site. There is a suggestion that the site may be near to a medieval priory although this has not been confirmed.</p> <p>The public workshops indicated that this is one of the last places where you can find Billington Plum which is rare and of ecological and cultural significance – it was used for dying in the 19<sup>th</sup> Century.</p> <p>The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.</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</p>	<p>The site is not constrained by designated areas and does not threaten the qualities of a designated area.</p> <p>However, concerns were expressed at the public workshops about the extent of</p>	O	O	O

Silica Sand Site: MD21, Land East of A4146 Billington				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
designated areas?	<p>damage to the landscape and loss of countryside and period of time for extraction from extracting specialist sands from this site. In addition, the site lies within the Landscape Character Area of <i>settled and farmed clay hills</i> (type 8) making the area relatively visible from a large area. Landscape condition is considered to be poor in this area. All of the area is within the Green Belt (as are most of the sites proposed in the County).</p> <p>The spatial extent of this impact may be widespread as the site could be visible from a large area. 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 character of the area.</p> <p>The long term effects of the development would depend on the restoration of the site.</p>			
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).	The site is adjacent to South Beds Local Plan Open Space Proposal R7. In the long term the site could help to provide much needed green infrastructure in this Growth Area to the East of Leighton Buzzard. The site is also in the Greensand Trust Area and is a BAP wetland opportunity area.	O	O	G
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?	<p>The site may cause nuisance to residential developments, especially at Billington. Although the stakeholder workshops highlighted that the site is included within Policy R7 of the South Bedfordshire Local Plan (as new urban open space) further investigation has shown that this is not the case. Policy R7 refers to land which is west of the site.</p> <p>The public workshops indicated a concern that the site is part of open countryside</p>	R	R	G

Silica Sand Site: MD21, Land East of A4146 Billington				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
	<p>which forms a natural boundary between Leighton Buzzard and Billington – there are major concerns that this break would be lost, resulting in the village 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>The public workshops indicated a concern about health impacts from noise, dust and air pollution from more sand extraction in the area.</p> <p>In the long term of the site could contribute to green infrastructure this would have a positive effect.</p>			
Transportation				
<p>Which mode of transport (rail, road or water) is most likely to be used in the transportation of the aggregate?</p> <p>Is the site near to the strategic highway network?</p>	<p>From a transport perspective this site is well located to the strategic road network and would be worked as an extension to the existing Grovebury Road quarry – this has an established access direct to the A505 – does not pass any residences - proposal site would not intensify HGV traffic over existing use.</p> <p>A right of way extends along part of the site boundary. The nature of the effect would depend upon mitigation.</p>	○	○	○
Extent of remaining landbank				
<p>To what extent does the proposed site minimise impacts on existing landbanks? i.e. contribute to landbanks through reserves. <i>For silica sand, supply at sites needs to be looked at individually. A key question will be how the benefit of mineral supply weighs against local impacts of working.</i></p>	<p>The site will contribute over 1.5 million tonnes of industrial sand of mixed uses (this is likely to be similar to Grovebury Quarry which produces material suitable for concrete aggregate production as well as for other industrial purposes). The site would have significant effects on the amenity of the local population, particularly in terms of transport. The minerals planning process need to weigh up the implications of this with the likely need for the material, particularly taking into account the fact that the sites does yield concreting aggregate</p>	○	○	○
Conservation and protection of water resources				
<p>To what extent are water resources used or impacted upon for</p>	<p>The site falls within the Nitrate Vulnerable Zone and is partly within the River</p>	○	○	○

Silica Sand Site: MD21, Land East of A4146 Billington				
SA Objective and Criteria	Summary of impact (including nature and spatial extent of the impact, probability, duration, frequency and reversibility).	Significance of the effect		
		Short	Medium	Long
the extraction of the aggregate?	Ouzel Internal Drainage Board Area. The public consultation workshops indicated that there is a concern about subsidence. This has not been confirmed and would need further investigation.			
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>	The amount of waste which would be produced as part of this operation is uncertain. Further details should be requested from the site operator regarding estimates of waste per tonne.	O	O	O
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. The site is within the Growth Area to the East of Leighton Buzzard and in the long term could provide much needed green infrastructure. No other constraints have been identified.	O	O	G

## Building Stone Sites

Building Stone Site: MD18, Bury Farm Pavenham						
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 is the same as the assessment for the building stone strategy.				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 otter 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>The nature of the effect is uncertain without further investigation into the likelihood of archaeological finds on the site.</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 character of the area.</p>	R	R	O		

Building Stone Site: MD18, Bury Farm Pavenham				
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 is the same as the assessment for the building stone strategy.		Short	Medium	Long
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			

Building Stone Site: MD18, Bury Farm Pavenham				
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 is the same as the assessment for the building stone strategy.		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