



CLIENT PROJECT REPORT CPR2103

Oxfordshire Minerals and Waste Local Plan: Core Strategy

Sustainability Appraisal of the Proposed Submission Document

Appendix B: Consultation Responses

Appendix C: Development of the Local Plan

August 2015

Contents

Appendix B	Consultation Responses	B-1
Appendix B.1	Pre Submission Core Strategy Sustainability Appraisal Report March 2012- Consultation Responses	B-1
Appendix B.2	Scoping Report December 2013 - Consultation Responses	B-4
Appendix B.3	Sustainability Appraisal of the Oxfordshire Minerals and Waste Local Plan: Core Strategy Consultation Draft February 2014 - Consultation Responses	B-5
Appendix C	Development of the Local Plan	C-1
Appendix C.1	Minerals and Waste Core Strategy Issues and Options (2005 - 2006)	C-1
Appendix C.2	Minerals and Waste Core Strategy Preferred Options (February 2007)	C-4
Appendix C.3	Minerals Spatial Strategy Options (May 2010)	C-9
Appendix C.4	Minerals Spatial Strategy Revised Options (September 2010)	C-13
Appendix C.5	Aggregates Apportionment Options (July 2011)	C-17
Appendix C.6	Waste Spatial Strategy Options (August 2011)	C-23
Appendix C.7	Minerals Planning Strategy (September 2011)	C-25
Appendix C.8	Waste Planning Strategy (September 2011)	C-26
Appendix C.9	Aggregates Apportionment Options Addendum (March 2012)	C-27
Appendix C.10	Minerals and Waste Core Strategy Proposed Submission Document (May 2012) – subsequently withdrawn	C-34
Appendix C.11	Oxfordshire Minerals and Waste Local Plan: Core Strategy Consultation Draft (February 2014)	C-36

Appendix B Consultation Responses

This appendix includes consultation responses from 2012 to 2014 that relate to the Sustainability Appraisal documents. Details of consultation responses from earlier stages of planning can be found in Appendix A of the Pre Submission Core Strategy SA Report (March 2012).

The first set of consultation responses (Section B.1) relate to the Pre Submission Core Strategy SA Report from May 2012 (that was subsequently withdrawn).

Section B.2 provides details of the responses received during the consultation on the updated Scoping Report in Dec13/Jan14.

Finally, Section B.3 provides the responses that were received during the consultation on the new Minerals and Waste Core Strategy/Local Plan in spring 2014.

B.1 Pre Submission Core Strategy Sustainability Appraisal Report March 2012- Consultation Responses

Table B-1 provides details of the consultation on the Pre Submission SA Report, which was consulted upon alongside the Proposed Submission Document in May/June 2012. The table shows the responses of the following organisations and interested parties:

- English Heritage;
- Communities Against Gravel Extraction (CAGE);
- Kemp & Kemp LLP;
- Wallingford Town Council (Mayor R. Lester);
- Cholsey Parish Council; and
- Oxfordshire County Council (Councillor P. Greene).

The table provides a summary of their response, and the action taken in response.

Table B-1: Summary of the Consultation Responses on the March 2012 Sustainability Report

Summary of comments	How the comments have been taken on board
English Heritage	
<p>In the summary of the Appraisal findings, reference should be made to the archaeological interest of the Lower Windrush Valley, as this is recognised in the full assessment on page 147.</p>	<p>The appraisal summary in section 6 of the February 2014 SA Report has been updated to reflect this issue.</p>
<p>English Heritage does not understand why it is apparently not proposed to monitor Policy C7. The effects of the Core Strategy on the historic environment should be monitored.</p>	<p>Table 6.1 suggested monitoring related to significant effects and as no significant effects were identified for C7 no monitoring was suggested in this table. However, it does not follow that effects of the core strategy on the historic environment will not be monitored. Table 6-2 of the 2012 SA Report included a baseline indicator related to the historic environment. Within the February 2014 SA Report potential monitoring indicators for the historic environment are proposed in the SA Framework, included in Appendix D. The draft monitoring framework will be proposed in the Sustainability Report to accompany the Submission Local Plan (Core Strategy). The final monitoring plan will be published in the SA/SEA Statement, alongside the adopted Local Plan (Core Strategy).</p>
Communities Against Gravel Extraction (CAGE)	
<p>Inadequate Environmental Assessment. The failure to carry out a proper environmental assessment renders the Plan not legally compliant and unsound. The Environmental Assessment carried out was, in consequence, inadequate given the precision of the site selection process for Cholsey, and the whole approach remains tainted by the appearance of the bias.</p>	<p>The Consultation Draft Local Plan (Core Strategy) takes a more strategic approach than the previous Pre-Submission Core Strategy, identifying broad areas of search rather than the more specific areas for extraction as was previously the case. Detailed assessments of sites will be undertaken at the planning application stage. An assessment has been undertaken of the revised policy within the February 2014 SA Report. No action is therefore required in relation to this response.</p>
Kemp & Kemp LLP	
<p>Concerns about the Strategic Environmental Assessment (SEA) as it relates to Cholsey. The constrained nature of the "new area of working at Cholsey" is such that that "area" is in fact a specific site (SG33) located in the gap between Cholsey and Wallingford and situated to the south of the A4130 and to the west of the Wallingford-Cholsey road, and where consequently, a more detailed assessment is required.</p>	<p>See above.</p>

Failure to carry out a proper environmental assessment means that the Plan is neither legally compliant nor sound.	
Wallingford Town Council (Mayor R. Lester)	
See CAGE representation.	See above.
Cholsey Parish Council	
See the CAGE submission.	See above.
Oxfordshire County Council (Councillor P. Greene)	
See the CAGE submission. All references to Cholsey must be removed.	See above.

B.2 Scoping Report December 2013 - Consultation Responses

Table B-2 provides details of the consultation on the Scoping Report, which was consulted upon during the development of the Oxfordshire Minerals and Waste Local Plan: Core Strategy Consultation Draft in December 2013/January 2014. The following organisations provided responses to the consultation:

- English Heritage; and
- Environment Agency.

Table B-2: Summary of the Consultation Responses on the December 2013 Scoping Report

Summary of comments	How the comments have been taken on board
English Heritage	
Add a reference to English Heritage's publications in the Plans, Policies and Programmes.	The plans, policies and programmes list has been updated.
The guidance suggests a specific sustainability appraisal objective of "conserve and enhance the historic environment, heritage assets and their settings" which we would prefer to SA objective 2.	The SA framework has been updated.
The proposed indicators would be more informative if it was percentage of permitted applications rather than number, also add in some additional indicators.	The SA framework has been updated.
Environment Agency	
The following suggestions were made with regards to the SA Framework: Add in the following indicators for SA3: 'Number of permitted applications using SUDS including pollution prevention measures', 'Number of permitted applications using SUDS including pollution prevention measures'. Amend SA 6 to 'to reduce the risk of flooding'	The SA framework has been updated.
We are in agreement with the approach proposed.	No action required.

B.3 Sustainability Appraisal of the Oxfordshire Minerals and Waste Local Plan: Core Strategy Consultation Draft February 2014 - Consultation Responses

The following section provides details of the most recent round of consultation on the Draft Plan, in February 2014. The list below shows who was consulted, while the table that follows shows who responded, provides a summary of their response and the action taken in response.

The following organisations responded to the consultation on the February 2014 version of the Sustainability Appraisal of the Consultation Draft:

- English Heritage;
- Environment Agency;
- Natural England;
- Oxford City and County Archaeological Forum (OCCAF);
- Oxfordshire Architectural and Historical Society (OAHS); and
- South Oxfordshire District Council

Table B-3: Summary of the Consultation Responses on the February 2014 Sustainability Appraisal of the Consultation Draft

Summary of comments	How the comments have been taken on board
English Heritage	
<p>English Heritage has published guidance on Strategic Environmental Assessments, Sustainability Appraisal and the Historic Environment available using the following link: http://www.english-heritage.org.uk/publications/strategic-environ-assessment-sustainability-appraisal-historic-environment/;</p> <p>Appendix 3 of the English Heritage guidance contains a range of possible decision-making criteria. Not all of these would be relevant to a Minerals and Waste Local Plan, but we would suggest that the following be considered:</p> <ul style="list-style-type: none"> • Conserve and/or enhance heritage assets and the historic environment? • Contribute to the better management of heritage assets? 	<p>The SA Objectives framework has been updated to provide a specific objective for cultural heritage, including the decision making criteria recommended by English Heritage.</p>

<ul style="list-style-type: none"> • Improve the quality of the historic environment? • Respect, maintain and strengthen local character and distinctiveness? • Provide for increased access to and enjoyment of the historic environment? • Alter the hydrological conditions of water-dependent heritage assets, including paleo-environmental deposits? • Provide for increased understanding and interpretation of the historic environment? • Secure a supply of local building and roofing materials? 	
<p>The policies, plans and programmes should include the Ancient Monuments and Archaeological Areas Act 1979 and the Planning (Listed Buildings and Conservation Areas) Act 1990 and explain what key issues and considerations for the historic environment (including obligations on local authorities as regards the historic environment) arise from this legislation.</p>	<p>These has been now been included in the review of policies, plans and programmes.</p>
<p>As regards the baseline information, it is important that the historic environment is broadly defined. All designated historic assets and their settings should be considered, together with potential impacts on non-designated features of local historic or architectural interest and value since these can make an important contribution to creating a sense of place and local identity. We would also draw your attention to the need to tailor the information to the scale of the Plan, for it to describe the current and future likely state of the historic environment, and for it to allow meaningful conclusions to be drawn.</p>	<p>The baseline information has been updated to include the heritage assets that may be affected by the plan.</p>
<p>Section 3.3 of the Sustainability Appraisal of the Consultation Draft refers to the baseline information in the most recent Scoping Report, which largely just sets out the designated assets in the County, with no indication of their location. There is little reference to the condition of heritage assets or the historic environment in the County (although it is noted that some areas have particularly experienced the cumulative impact of development).</p>	<p>There is a map showing the location of cultural heritage designations in Oxfordshire. The baseline information refers to the English Heritage 'heritage at risk' list.</p>
<p>More crucially, the SA does not specifically identify the historic environment baseline for each of the areas of search. The Assessment Matrix in Appendix D only does this very superficially.</p>	<p>The baseline information has been updated to include the heritage assets that are associated with the Strategic Resource Areas.</p>
<p>In Table 4-1, we agree that minerals and waste development could result in the loss or destruction of some of the historic assets of the County, although neither geological SSSIs nor Local Geology Sites are historic assets.</p>	<p>Noted and amended.</p>
<p>We welcome and support, in principle, Sustainability Appraisal Objective 2 for its inclusion of the conservation and enhancement of the historic environment, but we would suggest that it be an objective in its own right. The English Heritage guidance suggests a specific sustainability appraisal objective of "conserve and enhance the historic environment, heritage assets and their settings", which we would prefer. This would allow for more refined Sub-Objectives (or decision-making criteria).</p>	<p>The SA objectives have been updated to provide separate objectives for landscape and the historic environment. The objective recommended by English Heritage is now Objective 2b in the updated framework.</p>

<p>The Assessment Matrix in Appendix D of the SA report indicates, under "Likely Effect" that Policy M3 would have some positive and some negative effects in relation to SA Objective 2, but all the effects identified under "Justification and Evidence" are potentially adverse or negative. It is very difficult therefore to understand what positive effects there might be!</p>	<p>The assessment for Policy M3 has been updated and so this comment is no longer applicable.</p>
<p>We welcome the "number/percentage of planning applications where archaeological investigations were required prior to approval", "number/percentage of planning applications where archaeological mitigation strategies were developed and implemented" and "number/percentage of permitted applications for Minerals and Waste development which include conditions for the protection or enhancement of the historic and prehistoric environment in Oxfordshire" as potential indicators identified in Table 8-1, although these relate to mitigation rather than direct effects. We therefore suggest that indicators be included that would actually monitor the effects of the Strategy on heritage assets e.g. "Area of highly sensitive historic landscape characterisation type(s) which have been altered and their character eroded".</p>	<p>This indicator has now been added to the SA Framework</p>
<p>Paragraph 6.3.2 implies incorrectly that effects on heritage would be temporary and can even then could be avoided or mitigated, whereas in fact loss of archaeological heritage and historic landscape character is permanent. It fails to refer to policy C9 and also to consider the fundamental principle stated in paragraph 126 of the NPPF that LPAs "should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance."</p>	<p>The SA Report (paragraph 6.3.3.) has been updated to reflect the fact that some impacts on heritage assets are permanent and to cross-reference to the mitigation provided by Policy C9.</p>
<p>Natural England</p>	
<p>The following comments were made with regard to the Sustainability Appraisal: In the NTS, the key Sustainability Issues and Options in Oxfordshire do not include landscape protection, despite this potentially being a key constraint on siting development especially with respect to the AONBs. We advise you consider whether this should be added as a key issue.</p>	<p>The importance of protecting the AONBs and the constraint that they provide to siting development are now reflected in the issues and opportunities section of the SA Report.</p>
<p>We are not clear about the potential monitoring indicator "Minerals and Waste development which include conditions for the protection or restoration of statutory or non-statutory landscape designations." As it is better to avoid impacts, and there is no certainty that conditions will be fully effective to fully mitigate impacts, it seems this indicator could be improved on. Perhaps an indicator such as "Minerals and Waste development where the anticipated residual landscape impact is neutral or positive" would be better.</p>	<p>The suggested indicator has now been added to the SA Framework.</p>
<p>Oxfordshire Architectural and Historical Society and Oxfordshire City and County Archaeological Forum (Joint Response)</p>	
<p>The SA/SEA report does not meet the requirements of the SEA Regulations and as such demonstrates that the Plan has not been developed with an adequate understanding of or consideration for the environmental sensitivities of the Areas of Search that the Plan promotes.</p>	<p>The following aspects have all been updated to provide a more robust assessment of the impacts on the historic environment:</p>
<p>The SA/SEA report on the Draft Core Strategy fails to identify and describe the real effects that the Strategy will have on the historic environment. The report is so deeply flawed that we further wish to</p>	<p>-Baseline information now provides more detail on the heritage assets that may be</p>

object to the draft Strategy on the basis that its development has not been informed and supported by a properly iterative Strategic Environmental Assessment.

The direct statutory requirement for SEA outweighs the guidance that ministers have issued regarding sustainability appraisal – but as with almost all such documents this is an SA that has sought to be correlated with SEA requirements, not an SEA report that also fulfils SA needs.

The falls well short of the requirements of the SEA Directive in every respect of what the SEA Regulations require. It betrays a fundamental misunderstanding of the difference between the SA approach of comparing objectives with policies and the prediction of likely real effects on the environment that SEA requires. Like many deeply flawed SAs there is more coverage of Historic Environment issues in the strategy itself than this appraisal: and the crucial issues – that the Areas of Search should exclude major scheduled monuments and other key heritage assets; and the major cumulative impact on Oxfordshire’s archaeology from ongoing mineral extraction in areas already decimated by gravel working has not been addressed or taken into account as a strategic choice.

A detailed assessment of the severe shortcomings of the SA in respect of heritage issues is presented in the appendix. While this might appear technical, it highlights how little serious attention has been given to this important aspect of Oxfordshire’s environment. Many of these criticisms are methodologically generic and apply equally to other issues, and overall represent such a flawed approach that the Strategy itself may prove unsound.

affected by the plan;

A separate SA Objective covering heritage has now been included in the framework;

The assessment methodology has been updated to provide a more detailed assessment of the policies in the plan,

-The Review of Plans, Policies and Programmes now includes heritage relevant legislation such as: UNESCO World Heritage Site Convention (1972); The Convention for the Protection of the Architectural Heritage of Europe (Granada Convention); Ancient Monuments and Archaeological Areas Act 1979 (as amended); Circular on the Protection of World Heritage Sites 07/2009; English Heritage Policy Statement: Mineral Extraction and the Historic Environment Consultation (EH, 2012); Heritage Protection Bill (Govt White Paper, Heritage for the Twenty First Century); Mineral Extraction and Archaeology: A Practice Guide (June 2008); National Heritage Protection Plan (English Heritage); Planning (Listed Buildings and Conservation Areas) Act 1990; PPS5 Planning for the Historic Environment – Practice Guide (DCLG, 2010); UK Government’s Statement on the Historic Environment for England (2010); and Strategy for the Historic Environment: Heritage Counts English Heritage 2014.

The SA coverage of heritage legislation is seriously deficient:

It does NOT identify a key relevant international convention (UNESCO World Heritage) or any current national heritage legislation (Ancient Monuments 1979, National Heritage 1983, Listed Buildings and Conservation Areas 1990) or associated Regulations which impose consent procedures and specific duties on Local Authorities in dealing with applications that affect ancient monuments and the setting, character and appearance of listed buildings and conservation areas and World Heritage Sites).

It does NOT explain what key issues and considerations for the historic environment arise from such

See comment above

<p>legislation and policy in terms of constraints on search areas and future allocations. The SA also fails to refer to or indicate the implications of other plans (especially housing and the central Oxford Growth Area) for demand in minerals.</p>	
<p>The baseline description of the historic environment is entirely inadequate and does not indicate what scope of baseline data will be gathered or what methods will be used to predict archaeological potential to allow the effects of options to be compared. It does NOT identify all key historic environment resources that should inform future allocations and proposals (Historic Environment Record; National Monuments Record; including National Mapping Programme; emergent HLC; CA appraisals; WHS management plan etc. etc.) It does NOT identify or discuss issues of the different ways in which the historic environment would develop in each of the areas of search – not even drawing out the stark differences between areas already subject to a long history of mineral extraction and waste disposal from those that do not.</p>	<p>The baseline information has been updated. In particular it now identifies the relationships between heritage assets and the Strategic Resource Areas. Information is also provided on where potentially important archaeological constraints exist.</p>
<p>The SA report does NOT identify the baseline historic environment for the ‘areas of search’ identified in the strategy, except as very broad brush total numbers of assets for the county as a whole with no indication of the geographical location. The tabulated appraisal matrices in Appendix D attempts to indicate the heritage of the areas affected but only at a very superficial incomplete level – for example the baseline AND impact assessment AND suggested mitigation for all the areas of search for sharp sand and gravel extraction is covered in just 299 words. Similar or much shorter coverage is the pattern for other policy objectives. Indeed, these tables vary considerably in whether or not they cover heritage aspects and are very incomplete and vague about what is mentioned. The SA does NOT identify or map areas of heritage importance within the areas of search identified in the strategy, although they include several scheduled monuments, and other important archaeological sites, numerous conservation areas, many listed buildings and their settings</p>	<p>The SEA baseline now identifies the baseline historic environment that are located within the Strategic Resource Areas identified in the strategy. The assessment of heritage and historic environment is now in line with other policy objectives as it is an independent SA objective.</p>
<p>This requirement is not restricted to “areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC”. There is no analysis (or proposed analysis) of particular problems for the historic environment though they are numerous and raise particular issues, especially in terms of interactions with other topics – e.g. potential dewatering of well preserved nationally important archaeology; or the major effects in terms of cumulative loss of nationally important archaeology in areas such as the lower Windrush valley and Cassington).</p>	<p>The assessment considers those potential effects that can be identified at the level of a Core Strategy. The SA of the Site Allocations Document will need to effects at a greater level of detail, including the cumulative effects that may result from groups of sites.</p>
<p>For the historic environment, environmental protection objectives were not adequately defined at the scoping stage ; no attempt yet to show explicitly how those objectives will be taken into account in any assessment of site allocations. There is also clear evidence that such considerations have NOT been taken into account during the preparation of the strategy since the areas of search include several very large scheduled ancient monuments, including Northfield Farm Long Wittenham where mineral</p>	<p>The SA framework has been amended to have a separate SA Objective ‘to conserve and enhance the historic environment, heritage assets and their settings’. The criteria for assessment are now as</p>

extraction was disallowed by a planning inquiry

follows:

- Will the Plan conserve and/or enhance heritage assets and the historic environment?
- Will the Plan contribute to the better management of heritage assets?
- Will the Plan improve the quality of the historic environment?
- Will the Plan respect, maintain and strengthen local character and distinctiveness?
- Will the Plan provide for increased access to and enjoyment of the historic environment?
- Will the Plan alter the hydrological conditions of water-dependent heritage assets, including paleo-environmental deposits?
- Will the Plan provide for increased understanding and interpretation of the historic environment?
- Will the Plan secure a supply of local building and roofing materials?

With the following indicators:

Number/percentage of planning applications where archaeological investigations were required prior to approval.

Number/percentage of applications where archaeological mitigation strategies were developed and implemented.

Number/percentage of permitted applications for Minerals and Waste development which include conditions for the protection or enhancement of the historic and prehistoric environment in Oxfordshire.

Area of highly sensitive historic landscape

	<p>characterisation type(s) which have been altered and their character eroded</p> <p>These will be taken forward to the site allocation stage.</p>
<p>Likely significant effect (should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects)</p> <p>This is not attempted in the main report, and the scoping report does not make clear how these different kinds of effects will be identified for the historic environment. The inadequacies of the baseline information and policy framework means that these matters the assessment is inevitably inadequate.</p> <p>In so far as this is attempted in the assessment matrices, they seek to simplify negative positive neutral or uncertain effects into a single tick-box for multiple aspects of the environment that have very different effects. There is no attempt to identify types of effect known from past experience to have occurred in the search areas;</p> <p>Even at a generic level the SA report does NOT describe the full range of likely effects that are well-known to arise from minerals extraction and waste disposal; it does NOT even attempt to distinguish how those effects differ as between these very different types of development</p> <p>It does NOT describe any beneficial effects likely to arise from the strategy (e.g. supply of stone for historic building restoration)</p> <p>It attempts only at the most superficial level to identify a few examples of synergistic effects and impact interactions though hardly any heritage related examples, and fails entirely to indicate which are most likely to be significant or why. Examples not covered include archaeology/hydrology; ecology/archaeology/ landscape; built heritage/ visual/ landscape; the synergistic character of effects on the setting of heritage assets and places – e.g. including traffic dust and odour; climate/ conserving encapsulated energy/ heritage conservation.)</p> <p>It does not attempt to describe which well known generic types of effect are permanent (e.g. loss of archaeology) and which are temporary or long term (e.g. intrusion on built heritage from plant that will be removed in a few years)</p> <p>The requirement of the SEA Regulations to address cumulative effects is especially pertinent but the SA has failed to consider it in the light of EC definition as “Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the [plan].”</p> <p>i) the effects of options in combination with past and reasonably foreseeable future minerals exploitation – especially in areas where major losses of archaeological heritage and landscape have already occurred;</p> <p>ii) the effects of the minerals and waste strategy in combination with past and reasonably foreseeable</p>	<p>The assessment methodology has been adjusted so that heritage and the historic environment has its own SA objective, and effects are considered in terms of their temporal scale, spatial scale, reversibility and permanence. This gives a more robust assessment of the effects on the historic environment as a result of the plan.</p> <p>The baseline information and policy framework have been updated to better reflect the current situation with regards to the historic environment in Oxfordshire.</p>

<p>future development of other kinds;</p> <p>iii) the cumulative cultural effect of the burden on hard-pressed county museum facilities to deal with the product of archaeological investigations and their long term preservation and display to the public</p>	
<p>The SA report and appendices make only very vague references to the need for mitigation and does not for example present a structured frameworks to indicate the implicit preferential hierarchy of preventing, reducing or offsetting effects. Since this is totally reliant on reliable identification of significant effects, as determined both by thorough baseline and full identification of likely effects, together with relevant policies the SA fails to propose effective measures.</p> <p>In addition, the known nature of the archaeological heritage in particular means that there is a substantial risk that significant unforeseen effects will occur. This means that a strategic mitigation strategy MUST provide policies for pre-determination evaluation, provision to prevent indirect effects caused by dewatering, and research frameworks and methodological protocols for archaeological investigation, reporting and archiving. Will also require a strategy and mitigation protocols for safeguarding the setting and amenity of historic places. Some of this is implicit in the Strategy but has not been applied in the SA to exclude highly sensitive areas form the Areas of Search.</p>	<p>Following the consultation undertaken in 2014 the mitigation provided within the Plan has been enhanced.</p> <p>The SA of the Site Allocations Document will undertake a more detailed assessment on the potential effects associated with taking forward particular sites and groups of sites. This will need to provide a more detailed consideration of mitigation.</p>
<p>At a high level, the SA does not clearly assess in any quantitative terms options for obtaining minerals by other means than extraction in Oxfordshire – notably greater reliance on marine minerals and recycled aggregates, although these are part of the Strategy. It does not explain how the proposed Areas of Search were selected or their boundaries drawn and what factors were considered in doing so – including why they include many highly sensitive heritage areas.</p> <p>To be effective any assessment requires a clear understanding of key effects and interactions, and the extent to which for different alternatives they might be addressed. The inadequacy of the heritage baseline, assessment of cumulative effects and strategic framework of mitigation proposals, means that the heritage can have had no influence on the choices made – as is evident from the inclusion of major heritage designations within the Areas of Search. Instead the appraisal assesses the chosen geographical options for siting new development (options 10 and 18) as positive because relevant policies will be applied, not what effects will actually be. Experience shows that while adverse effects might be reduced or offset by such policies – or even avoided, they will NOT be positive.</p> <p>This betrays a fundamental misunderstanding of the difference between the SA comparison of objectives and policies and the prediction of likely real effects on the environment that SEA requires.</p> <p>The account of difficulties encountered reveal a serious lack of expertise or experience in heritage matters on the part of the authors, but no understanding of genuine issues of assessment difficulty.</p> <p>The excuse that much uncertainty is down to not having final development sites is a standard means by which the basic purpose of SEA is neutered: issues can only be assessed at project level. It also belies decades of experience of understanding and dealing with the very recurrent typical effects that are known at a generic level to arise from mineral and waste developments and how their different characteristics give rise to different but typical effects.</p>	<p>The SA work has undergone several iterations during the development of the Core Strategy (see Section 5 of the main report), with high level options on strategy having been considered during these stages.</p> <p>As described in comments above, the assessment methodology for the Proposed Submission Document has now been updated to provide a more detailed assessment of the potential effects on the historic environment and other SA topics.</p> <p>The planning and accompanying SA that will be undertaken during the development of the Site Allocations Document will provide further detailed assessment, in which the levels of uncertainty will be reduced given that individual locations, with known constraints and opportunities, will be being considered.</p>

The proposed measures for monitoring the effects of the strategy on the historic environment are limited to the proportion/number of archaeological interventions which is entirely inadequate.

There are no proposals for monitoring the effects of the strategy on the built heritage or historic landscape character, or people’s interaction with their heritage and its economic and social contribution.

There are no proposals to monitor the effectiveness or otherwise of mitigation measures in relation to the SEA requirement to “avoid” and “reduce” rather than “offset” adverse effects, and no proposal to develop technical monitoring and actions that would be need to be developed to “avoid” and/or “remedy” indirect effects of dewatering on adjacent archaeological sites.

The proposed measure relating to the number of archaeological interventions will only monitor the mitigation process (mainly reflecting offsetting action where significant effects have not been avoided, with no means of judging whether or not that was appropriate). There are no proposals to monitor how effectively significant effects are predicted and avoided; nor the cumulative qualitative archaeological impact on the county’s heritage or areas already subject to long term workings; nor the adequacy of mitigation measures to meet research objectives and public safeguarding of the results of investigations through museums and publication.

Current identified ‘indicators’ for the achievement of historic environment objectives are thus very limited and will certainly not adequately cover the real effects that are most likely to be significant.

As described above the SA framework has been amended to have a separate SA Objective ‘to conserve and enhance the historic environment, heritage assets and their settings’. The criteria for assessment and proposed indicators have also been updated

The NTS has utterly misrepresented the likely effects of the Strategy on the historic environment, stating “Whilst the operation of minerals and waste facilities has the potential to result in some adverse cumulative effects on local landscapes in the short-medium term, the measures in the common core policies along with the requirements of Policies W6 (Siting of waste facilities) and Policy M4 (Working of aggregate minerals) should help to avoid and mitigate these effects. The aim of the waste strategy to minimise waste arisings along with reducing the amount of waste sent to landfill will contribute towards the protection of local landscapes”

This is not a nontechnical summary but a word-for-word transcription of paragraph 6.3.2 which supposedly deals with cumulative heritage and landscape effects. It implies incorrectly that effects on heritage would be temporary and can even then could be avoided or mitigated, whereas in fact loss of archaeological heritage and historic landscape character is permanent. It not only fails to refer to policy C9 but fails to consider the fundamental principle stated in NPPF para 126 that LPAs “should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance.”

Like the main report the NTS fails to identify the sensitivity of the historic built environment or the statutory constraints that apply beyond planning policy. By wrapping up heritage with landscape as if it were one issue the NTS (like the main report) utterly fails to distinguish differences in the likely significance of effects.

The SEA has been amended to consider ‘Landscape’ and ‘Historic Environment’ as two separate objectives (SA2a and SA2b). These are distinct objectives- the numbering is to avoid confusion with previous rounds of assessment that would potentially happen if all objectives were to be numbered differently.

The assessment methodology has been updated to provide a more detailed assessment of plan elements against objectives. The assessment now includes the reversibility of effects and the permanence of effects. Where appropriate, effects for heritage and the historic environment have been identified as irreversible and permanent. Policy C9 has been referred to in relation to mitigation of effects.

Appendix C Development of the Local Plan

C.1 Minerals and Waste Core Strategy Issues and Options (2005 - 2006)

Draft issues for the minerals and waste core strategy, and various options for addressing these were initially identified by Council Officers. The County Council identified 16 issues (Table C-1) that the Core Strategy should address, with a total of 95 options for how to address these. The options were subject to SA in August 2005, with the findings documented in an Interim Sustainability Appraisal Report. The appraisal process was undertaken through a workshop involving council officers and representatives of technical bodies and interest groups.

Table C-1: Issues and Options considered in the SA – June 2006

Issue 1: How should the Oxfordshire sand and gravel apportionment of 1.82 million tonnes per annum to 2016 be provided for?
<ul style="list-style-type: none"> a. Make provision for the full plan period through area and/or site identification b. Make site and/or area provision to 2016 only backed up by criteria policies
Issue 2: How should the Oxfordshire sand and gravel apportionment of 1.82 million tonnes per annum be sub-divided between soft sand and sharp sand and gravel?
<ul style="list-style-type: none"> a. Continue the existing Minerals and Waste Local Plan split of 10% soft sand and 90% sharp sand and gravel b. Use current average production split of 17% soft sand and 83% sharp sand and gravel c. Use some other split
Issue 3: Where should new sand and gravel workings be located?
<ul style="list-style-type: none"> a. Continue to concentrate new workings in existing strategic areas of working (currently 65% of sharp sand and gravel production is from the two strategic areas in West Oxfordshire, i.e. the Eynsham-Cassington-Yarnton and the Lower Windrush Valley areas) b. Promote new strategic working area(s) in the southern part of the county, to spread production more evenly in relation to the main demand areas in Oxfordshire c. Promote a more dispersed pattern of smaller scale working areas
Issue 4: How should the Oxfordshire crushed rock apportionment of 1.0 million tonnes per year to 2016 be provided?
<ul style="list-style-type: none"> a. Locate new permissions limestone workings in the Witney – Burford area b. Locate new permissions limestone workings in the Oxford – Bicester area c. Make increased provision for working of ironstone from the north of the county and reduced provision for limestone working
Issue 5: Should there be new quarries or extensions to current quarries?
<ul style="list-style-type: none"> a. Prefer extensions to existing quarries for additional sand and gravel/limestone & ironstone provision b. Prefer new quarries for additional sand and gravel/limestone & ironstone provision
Issue 6: What scope is there for increasing supply of recycled and secondary aggregates to replace primary aggregates and how can the plan promote increased supply?
<ul style="list-style-type: none"> a. Make provision for aggregates recycling facilities sufficient to meet regional and/or local targets for supply and use of recycled aggregates b. Make over provision for aggregates recycling facilities to ensure supply can be maximised
Issue 7: How should provision be made for the new waste management facilities that will be needed?

- a. Identify broad locations for waste management facilities
- b. Identify site specific allocations for waste management facilities
- c. Set locational criteria against which planning applications would be considered

Issue 8: How should provision be made for the new waste management facilities that will be needed?

- a. Identify locations for specific types of facility
- b. Identify locations for more general types of facility, to allow flexibility for evolving waste management practice and technology
- c. Rule out particular types of facility as unacceptable on planning grounds at particular locations or countywide

Issue 9: What scale of new waste management sites should provision be made for?

- a. Identify a small number of strategic sites for large-scale waste treatment facilities or integrated groups of facilities ('resource parks')
- b. Identify a larger number of more local sites for small-scale waste treatment facilities

Issue 10: Where should new waste management facilities be located?

- a. Locate waste treatment facilities in or close to the urban centres where most waste is produced
- b. Locate waste treatment facilities in more rural locations where sites may be more readily available

Issue 11: At what type of site should waste treatment facilities be located?

- a. Locate waste treatment facilities on industrial sites
- b. Locate waste treatment facilities at existing waste management sites
- c. Locate waste treatment facilities on brownfield sites in the countryside
- d. Locate waste treatment facilities on greenfield sites

The issues and options that were appraised were slightly different from those that appeared in the Minerals and Waste Core Strategy Issues and Options Consultation Paper. Some of the wording was modified to enable the assessment to be more readily carried out, and some similar issues were combined to make more effective use of people's time in the appraisal workshop (the method used to undertake the assessment). Nevertheless, the fundamental meaning of the issues and options was not changed. In the case of some of the issues, meaningful appraisal was not considered possible and so was not carried out (for example, it was not considered possible to assess Issue 2: Option c, which was 'to use some other split').

No significant effects were identified for any of the minerals or waste options considered. Various recommendations were made for consideration at the next steps as outlined in the following box.

Box 1: Recommendations from the Interim SA (written by OCC)

Minerals

The appraisal of how Oxfordshire should meet its sand and gravel apportionment suggests that there would be more certainty and greater control if site allocations were specified in the MWDF, although it was highlighted that the areas selected must be acceptable to the industry. Just having criteria based policies could lead to development in less sustainable locations as they will not be subject to SA/SEA.

The appraisal recommends that Oxfordshire's apportionment should be subdivided between soft sand and sharp sand and gravel with a higher percentage of soft sand provision than in the existing Minerals and Waste Local Plan. The reasons for this are mainly to do with increased market demand for soft sand and the need for the MWDF to

make provision to meet this, thereby avoiding ad-hoc development.

The appraisal suggests a slightly broader spread of sand and gravel working than at present. It is argued this would help reduce the transport impacts associated with production and location of market areas. This strategy would also reduce the cumulative impact of developments. However, it was highlighted that this would be dependent on the existence of workable deposits and the economics of developing such sites.

The appraisal also suggests that a slightly broader spread of workings for meeting the crushed rock apportionment would be preferred. However, this will again be dependent on availability of sites and economics.

Concerning the issue of whether new quarries or extensions to current quarries are preferred, the appraisal suggests each site should be assessed on its own merits. It was highlighted that extensions would not need new infrastructure but would add to cumulative impact locally. The economics of the size of extension or of new sites would also be a factor.

The appraisal indicated that there are no negatives in providing either sufficient capacity or over-provision of capacity for recycling of aggregates. However, over-provision seemed to be more positive in developing a sustainable strategy bearing in mind the lack of accurate data

Waste

The appraisal suggests that identification of site specific allocations in the MWDF would be the more sustainable option. However, the other two approaches – identification of broad areas and criteria based policies – would allow flexibility in the MWDF. Therefore a combination of the three options (criteria, identification of broad areas and actual site selection) may be the most appropriate sustainable strategy.

The appraisal was not clear on which was the overall best strategy on how to provide new waste management facilities. Flexibility of sites (not restricting types of technologies on a site) was favoured by the workshop but, as with the previous issue, the best solution may be a combination of the approaches (some sites to be specific for certain technologies and others for a more general range of technologies).

When the appraisal assessed the merits of scale of sites (a few large sites or more numerous small sites) for waste management facilities, the recommendation was for a few large sites which could accommodate strategic and/or integrated management facilities. However, this option is heavily dependent on the transport effects being sustainable.

The appraisal recommends locating waste facilities in or close to urban areas. The disadvantages of this (conflict with potential housing sites, noise and air pollution) are assessed to be relatively minor in relation to the benefits (less distance to travel, potential for combined heat and power and higher likelihood of development on brownfield land).

The appraisal did not recommend which type of site would be best suited to locating a waste treatment facility. It showed that the suitability of sites depends on factors such as the type of technology, size of facility, size of site and the density of surrounding human population. Each site must be assessed on its own merits. It was highlighted that for all options the impact upon the flood plain must be assessed.

Within the SA of the Minerals and Waste Core Strategy Preferred Options (February 2007) the recommendations from the issues and options appraisal were summarised (Section 6.2, February 2007), and the reasons for rejecting all of the other options considered were identified (Appendix 2, February 2007).

The Minerals and Waste Core Strategy (Issues and Options) Consultation document, along with the Interim SA Report, are available via the Oxfordshire County Council website at: <http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

C.2 Minerals and Waste Core Strategy Preferred Options (February 2007)

Following consultation on the Issues and Options, and taking into account the outcomes of the Issues and Options SA, draft Preferred Options were identified. These were discussed by the Minerals and Waste Stakeholder Forum and at a County Council Minerals and Waste Working Group (in September 2006). An amended set of Preferred Options was then published for consultation in February 2007.

The Core Strategy Preferred Options consultation document set out the County Council's preferred options for addressing each of the key issues that had previously been identified. For each issue the document set out: background to the issue; the options that were set out (or the questions posed); the response to the consultation on the issues and options; the results from the interim sustainability appraisal; the preferred option(s) (addressing the reason for selecting the preferred option(s)); and proposals for the sort of policies that should be included to deliver the preferred option(s).

The Preferred Options were subject to SA in February 2007, with the findings documented in a Sustainability Appraisal Report. Appendix 3 of the 2007 SA Report contained detailed comments made by the appraisal group on the Preferred Options.

The Preferred Options that were assessed were slightly different from those that appeared in the Core Strategy Preferred Options Consultation Paper. Some of the wording was modified to enable the assessment to be more readily carried out, and some similar issues were combined to make more effective use of people's time in the appraisal workshop (the method used to undertake the assessment). Nevertheless, the fundamental meaning of the issues and options was not changed. In the case of some of the issues, meaningful appraisal was not considered possible for some of the SA objectives and so was not carried out (for example where issues were considered to be related to implementation).

The following table provides details of the preferred options assessed and the significant effects identified.

Table C-2: Preferred options considered in the SA and the significant effects identified – February 2007 (written by OCC)

Preferred option 3b: The County Council's preferred option is to identify extensions to existing quarries in the short term (approx. 5 years) followed by the identification of new quarries for the longer term (approx. 5 years plus).
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Significant positive effects were identified for the SA objectives related to minerals supply and resource consumption as the option should ensure market demands are met and promotes supply from within the County so as to reduce imports and ensure net self-sufficiency.

Preferred option 3c: The County Council's preferred option is to identify sites for mineral working

for the period to 2019 supported by criteria policy for the period beyond.
Significant positive effects were identified for the SA objectives related to minerals supply and resource consumption as the option should ensure that demands are met in the long term and reduce the need for imports.
Preferred option 4: The County Council's preferred option is to plan for a split of 17% soft sand and 83% sharp sand which is in line with current production (5 year average).
Significant negative effects were identified for the SA objective related to transport, due to an increase in traffic movements in soft sand areas, although it was considered that there would be no overall strategic increase. Significant positive effects were identified for the SA objectives related to minerals supply and resource consumption as the option should ensure market demands for soft sand are met and reduce the need for soft sand imports.
Preferred option 5: The County Council's preferred option for sand and gravel is to continue identifying new workings in the existing West Oxfordshire working areas and to identify new working area(s) in the southern part of Oxfordshire, subject to the results of further work on site assessment.
Significant positive effects were identified for the SA objectives related to minerals supply, resource consumption, and economic growth as the option should ensure market demands for aggregates are met, reduce the need for imports and help support economic growth.
Preferred option 6: The County Council's preferred option for crushed rock is for workings to be located mainly in the Witney – Burford and Oxford – Bicester areas.
Significant positive effects were identified for the SA objectives related to minerals supply and resource consumption as the option should ensure that demands are met and reduce the need for imports.
Preferred option 7a: The County Council's preferred option is to identify permanent facilities for aggregate recycling where possible supported by temporary facilities at minerals and waste sites.
Significant positive effects were identified for the SA objectives related to minerals supply and resource consumption as the option should reduce pressure on minerals workings and reduce the need to extraction of virgin materials. Significant positive effects were also identified for waste treatment, as the option should ensure capacity to meet Oxfordshire's requirement to produce secondary and recycled aggregates.
Preferred option 7b: The County Council's preferred option is to maximise the provision for aggregates recycling through a positive policy approach.
Significant positive effects were identified for the SA objectives related to minerals supply and resource consumption as the option should reduce pressure on minerals workings and reduce the need to extraction of virgin materials. Significant positive effects were also identified for waste treatment, as the option should ensure capacity to meet Oxfordshire's requirement to produce secondary and recycled aggregates.
Preferred option 8a/b: The County Council's preferred option is to take the following sequential approach to locating aggregate recycling facilities: urban areas; close to urban areas; rural areas; and within this to take the following sequential approach to site identification: previously developed land; temporary minerals and waste sites; greenfield sites. This includes locations in the Green Belt, which will be considered against national and regional policy.
Significant positive effects were identified for the SA objectives related to minerals supply, resource consumption, waste reduction and waste treatment. By ensuring that facilities are available to make maximum provision for recycled aggregates the option will reduce the pressure on mineral workings and reduce dependence of virgin materials. The option also makes maximum provision for reducing the amount of aggregate sent to landfill.
Preferred option 9(i): The County Council's preferred option is for a continued local supply of aggregates at levels in line with regional policy plus imports to meet demands that cannot be met from this local supply.
Significant negative effects were identified for the SA objective related to transport, due to increases in traffic locally and county-wide.

Significant positive effects were identified for the SA objectives related to decent homes, minerals supply and resource consumption, as option ensures that local market demands for aggregates are met and should reduce imports.

Preferred option 9(ii): The County Council's preferred option is to include a policy option for new rail aggregate depots and, where possible, identify sites for rail aggregate depots.

Significant negative effects were identified for the SA objective related to resource consumption, as material used may not be locally produced.

Preferred option 10: The County Council's preferred option is for a locational Policy based on Structure Plan policy M2: In identifying appropriate locations, the County Council will take account of the distribution of sand and gravel resources; the existing pattern of supply and distribution of workings; proximity to main market areas; accessibility to the main transport routes; risk of birdstrike; restoration and after use potential; and development plan policies, in particular which seek to safeguard:

- important archaeological remains, historic buildings and areas;
- areas and sites of nature conservation importance, especially SACs and SSSIs;
- features of landscape importance, especially AONBs;
- best and most versatile agricultural land;
- the water environment;
- land uses which are sensitive to nuisance; and
- the safety and convenience of all road users, including pedestrians and cyclists.

Significant positive effects were identified with regards to the SA objective related to the countryside and historic environment, as the option seeks to safeguard features of landscape importance, important archaeological remains and historic buildings and areas.

Preferred option 11: The County Council's preferred option is for progressive working and restoration of mineral sites within reasonable timescales to acceptable uses that are appropriate to the location whilst maximising appropriate opportunities for restoration to agricultural land, habitat creation, recreation and public access.

Significant positive effects were identified for the SA objectives related to efficient use of land, biodiversity, open space, countryside and historic environment, and culture and leisure. This was because the option ensures opportunities for biodiversity enhancement, public access to the countryside, landscape and the historic environment, including previously restricted land, and for increasing culture and leisure activities.

Preferred option 12: The County Council's preferred option is to specify buffer zones around mineral workings and to require such other mitigation measures as may be necessary at the planning application stage, on a case by case basis, to provide protection for local residents and others against unacceptable loss of amenity.

No significant effects identified.

Preferred option 13: The preferred option for the County Council is to safeguard all mineral resources of potential economic importance for possible future use, including sand and gravel, limestone, ironstone and fuller's earth.

Significant positive effects were identified for the SA objectives related to decent homes, minerals supply and resource consumption. The option should ensure a long-term constant supply of aggregates for building materials. It should protect all economically viable mineral resources for future use to meet current growth and should ensure the opportunity to use resources for future development.

Preferred option 14a: The County Council's preferred option is to identify specific sites in the Waste Sites Document, particularly for strategic facilities; but also to indicate broad areas where facilities will be needed to serve local communities or where specific sites are not identifiable. This will be supported with locational criteria policies.

Significant positive effects were identified for the waste reduction and waste treatment SA objectives. Site allocation and broad areas should ensure opportunities for increased waste treatment before disposal, helping to achieve sustainable waste management.

Preferred option 14b: The County Council's preferred option is to identify locations that are

generally suitable for a range of facilities, to provide flexibility and allow for evolving waste management technology; but where there are sound planning reasons for doing so sites will be restricted to specified types of facility.

Significant positive effects were identified for the resource consumption, waste reduction and waste treatment SA objectives. The option should ensure maximum provision for recycling of waste materials, encourages reduction to landfill, promotes minimum capacity to meet national and regional recycling/recovery targets and allows for technological advances by allowing improving resource efficiency, sorting waste, and resource recovery.

Preferred option 14c: The County Council's preferred option is to provide for a mix of sites for both large and small scale facilities. For large-scale facilities, specific sites should be identified in the Waste Sites Document, but this is likely to be more difficult for smaller-scale facilities and there will have to be a greater reliance on locational criteria policies for these types of sites.

Significant positive effects were identified for the accessibility objective, as the option aims to make maximum provision for facilities. Significant positive effects were also identified for the waste reduction and waste treatment SA objectives. The option makes maximum provision to ensure the opportunity for increases in waste treatment before disposal and will help achieve sustainable waste management. It also encourages a reduction to landfill and promotes minimum capacity to meet national and regional recycling/recovery targets.

Preferred option 15a: The County Council's preferred option is to locate waste treatment facilities within or close to the main urban areas, subject to availability of suitable land. In recognition of the difficulty of finding sites for waste facilities, a sequential policy approach for site locations is likely to be needed.

Significant positive effects were identified for the SA objectives related to waste reduction and waste treatment. The option promotes opportunities to maximise waste treatment before disposal, helping to achieve sustainable management of waste.

Preferred option 15b/c: The County Council's preferred option is to take the following sequential approach to locating waste facilities: urban areas; close to urban areas; rural areas; and within this to take the following sequential approach to site identification: previously developed land; temporary waste sites; Greenfield sites. This includes locations in the Green Belt, which will be considered against national and regional policy.

Significant positive effects were identified related to efficient use of land as the option encourages development on brown field land. The option also promotes opportunities to maximise waste treatment before disposal, helping to achieve sustainable management of waste. As a result significant positive effects were also identified for the SA objectives related to waste reduction and waste treatment.

Preferred option 16(i): The County Council's preferred option is to ensure there is no restriction to the movement of waste management up the waste hierarchy and that there is adequate provision of a range of waste management facilities, including local communities having access to suitable facilities. This includes positive policies to encourage the provision of new facilities higher up the hierarchy.

Significant positive effects were identified for the SA objectives related to waste reduction and waste treatment, as the option strongly encourages movement of waste up the hierarchy to achieve sustainable waste management and encourage increases in treatment capacity.

Preferred option 16(ii): The County Council's preferred option is to limit landfill provision in line with national and regional policy and landfill targets while also recognising there will be a continued need for some landfill.

No significant effects identified.

Preferred option 16(iii): The County Council's preferred option is to make provision for at least the minimum capacity required to meet national and regional policy targets for recycling and recovery; and to provide a positive policy framework to enable advantage to be taken of any appropriate opportunities that may arise to increase capacity.

Significant positive effects were identified for the SA objectives related to waste reduction and waste treatment, as the option encourages reduction to landfill and promotes at minimum capacity to meet national and regional recycling/recovery targets.

Preferred option 16(iv): The County Council's preferred option is to plan to at least meet the national/regional targets for recycling and diversion from landfill through positive policies and identification of sites, but this will need to be kept under review. The regional targets should be used as a guide to the level of provision that is required as a minimum.

Significant positive effects were identified for the SA objectives related to waste reduction and waste treatment, as the option encourages reduction to landfill and promotes at minimum capacity to meet national and regional recycling/recovery targets.

Preferred option 17(i & ii): The County Council's preferred option is to provide for net self-sufficiency plus Oxfordshire's share of waste from London as set in regional policy.

Significant positive effects were identified for the SA objectives related to waste treatment, as the option should ensure Oxfordshire is self-sufficient in waste treatment.

Preferred option 17(iii): The County Council's preferred option is to provide for net self-sufficiency plus Oxfordshire's share of waste from London as set in regional policy. Imported waste should normally be limited to residues from treatment processes that require disposal by landfill, but import of waste for treatment at facilities in Oxfordshire could be appropriate where this would be a sustainable option or there would be overall benefits.

Significant positive effects were identified for the SA objectives related to waste treatment, as the option should ensure Oxfordshire is self-sufficient in waste treatment.

Preferred option 17(iv): The County Council's preferred option is to plan for the capacity requirements in regional policy, unless local information and circumstances indicate otherwise. This should be monitored and kept under review as new information become available.

Significant positive effects were identified for the SA objectives related to waste reduction and waste treatment, as the option encourages reduction to landfill and promotes at minimum capacity to meet national and regional recycling/recovery targets.

Preferred option 17(v): The County Council's preferred option is to plan for the capacity requirements in regional policy, unless local information and circumstances indicate otherwise. This should be monitored and kept under review as new information become available.

Significant positive effects were identified for the SA objectives related to waste reduction and waste treatment, as the option encourages reduction to landfill and promotes at minimum capacity to meet national and regional recycling/recovery targets.

Preferred option 18: The County Council's preferred option is for a locational policy based on principles similar to those included in Structure Plan Preferred option M2: In identifying appropriate locations, the County Council will take account of the distribution of the existing pattern of waste management facilities; proximity to main sources of waste and destinations of outputs from waste treatment processes; accessibility to the main transport routes; risk of birdstrike (for landfill); restoration and afteruse potential (for landfill); and development plan policies, in particular which seek to safeguard:

- important archaeological remains, historic buildings and areas;
- areas and sites of nature conservation importance, especially SACs and SSSIs;
- features of landscape importance, especially AONBs;
- best and most versatile agricultural land;
- the water environment;
- land uses which are sensitive to nuisance; and
- the safety and convenience of all road users, including pedestrians and cyclists.

Significant positive effects were identified with regards to the SA objective related to the countryside and historic environment, as the option seeks to safeguard features of landscape importance, important archaeological remains and historic buildings and areas.

Preferred option 19(i & ii): The County Council's preferred option is to make provision for landfill in line with national and regional policy targets; over time this will increasingly limit landfill to waste that has been subject to treatment while also recognising the continued need for some landfill capacity.

Significant positive effects were identified for the SA objectives related to waste reduction and waste treatment, as the option encourages reduction to landfill and promotes at minimum capacity

to meet national and regional recycling/recovery targets.
Preferred option 19(iii): The County Council's preferred option is to give priority to use of inert waste for restoration of mineral workings. No provision should be made for other types of inert waste landfill site and proposals for new landfill should include a stiff test of need for use of inert waste other than for restoring mineral workings.
Significant positive effects were identified with regards to the SA objective related to the countryside and historic environment, as the option should help to restore and enhance Oxfordshire's countryside and historic environment after mineral working.
Preferred option 19(iv): The County Council's preferred option is generally to safeguard existing landfill void for future use.
Significant positive effects were identified for the SA objective related to waste treatment, as the option promotes the safeguarding of landfill capacity for continued disposal of waste in line with regional Preferred option.
Preferred option 20: The County Council's preferred option is require such mitigation measures as may be necessary at the planning application stage, on a case by case basis, to provide protection for local residents and others against unacceptable loss of amenity.
No assessment was undertaken, as the cases are considered individually and it is therefore an implementation issue.

The Minerals and Waste Core Strategy (Preferred Options) Consultation document, along with the accompanying SA Report, are available via the Oxfordshire County Council website at: <http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

C.3 Minerals Spatial Strategy Options (May 2010)

In 2010, the Council identified draft spatial strategy options for the location of future areas for the extraction of sharp sand and gravel, soft sand, and crushed rock.

Based on the sub-regional apportionment for sand and gravel, the Council calculated that Oxfordshire needed to plan for 1.82 million tonnes per annum (mtpa) over the plan period. This was split between soft sand and sharp sand and gravel based on the historical production figures (over the last three years).

Based on the above split, the Council identified that it needed to plan for 21.511 million tonnes of sharp sand and gravel (net requirement) to meet the need to 2026. In order to deliver this net requirement the Council drafted three spatial strategy options. The possible options were to concentrate working; disperse it; or to phase development.

1. The Concentration Strategy – This option is further broken into the following three options:
 - 1a. Concentrate working to the north west of Oxford, in the Lower Windrush Valley, Stanton Harcourt, Eynsham and Cassington areas;
 - 1b. Concentrate working to the south east of Oxford, in Radley, Sutton Courtenay, Culham, Dorchester, Warborough and Benson areas; or
 - 1c. A combination of options 1a and 1b, concentrating working in both
2. The Dispersal Option – This option seeks to spread working areas across a number of areas to maximise the proximity of mineral supply to markets: Lower Windrush Valley, Stanton Harcourt, Eynsham, Cassington, Faringdon, Radley, Sutton Courtenay, Culham, Dorchester, Warborough, Benson, Wallingford, Cholsey and Caversham areas.

3. The Phased strategy option – This option seeks to allow short term extensions to existing sites in the Lower Windrush Valley, Eynsham, Cassington, Faringdon, Radley, Sutton Courtenay and Caversham areas as well as long term planning for one or more new strategic sand and gravel working areas in one or more of the following areas:

- Clanfield – Bampton;
- Culham;
- Dorchester, Warborough, Benson; or
- Wallingford – Cholsey.

For soft sand and crushed rock the options were as follows:

- Soft sand: meet demand from one resource area in the south west of County
- Crushed rock: strategic areas in the Witney-Burford and Chipping Norton-Bicester areas. Also to include continued supply of some crushed rock from the south west of the County in conjunction with the soft sand workings and identification of small resource area south west of Bicester.

A Sustainability Appraisal of the emerging options was undertaken by consultants Scott Wilson (now URS). The options were assessed against the SA framework that had been developed in the revised Scoping Report 2009. A summary of the assessment is provided in the box below. In terms of significant effects the following were identified for Sharp sand and gravel – the concentration strategy:

- In relation to the transport SA objective, option 1a was predicted to have a significant adverse effect. A significant increase in working within areas covered by Option 1a would lead to adverse effects and cumulative impacts on the road network in the area as it is already currently experiencing congestion.
- In relation to the land and soil quality SA objective, option 1a was predicted to have a significant positive effect. This is because restoration would contribute to the creation of large areas for wildlife conservation and improved recreational activities.
- In relation to the 'contributing to minerals provision', 'promoting efficient use of natural resources', and 'economic growth' SA objectives for each of three options potential significant positive effects were identified.

For the sharp sand and gravel dispersal and phasing options, and the options for soft sand and crushed rock, significant positive effects were predicted in relation to the SA objectives for 'contributing to minerals provision', 'promoting efficient use of natural resources', and 'economic growth'.

The full findings of the SA can be found in the Minerals Spatial Strategy SA Report which is available via the Oxfordshire County Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

Box 2: Summary of Options SA (written by Scott-Wilson (now URS), 2010)**Sharp sand and gravel – the concentration strategy****Option 1a**

This option would lead to concentration of working in the north west and west of Oxford. This area already experiences mineral extraction and further working in this broad location would lead to negative cumulative effects with regard to amenity for the local communities. Other cumulative effects include landscape and visual impacts for example in the Lower Windrush Valley where the landscape has already been extensively modified by mineral extraction. Given that most of the sand and gravel currently worked in this area is transported by road and that the road network is already experiencing congestion a significant increase in working in this area would have negative cumulative effects on the road network (in particular the A40) leading to increased congestion, continued greenhouse gas emissions and air and noise pollution associated with Heavy Goods Vehicle (HGV) movements.

There are also important nature conservation designations in close proximity to area 1. The location of these sites close to potential mineral works would restrict the exact location of working within the broad area. Working in this area would therefore require mitigation measures to be in place to avoid adverse negative effects on the nature conservation sites including creating the creation of buffer zones and other measures.

Some of the area covered by option 1a (e.g. the Lower Windrush Valley) lie within the Conservation Target Areas (CTAs) identified by the Oxfordshire Nature Conservation Forum. The main aim within CTAs is to restore biodiversity at a landscape-scale through maintenance, restoration and creation of BAP priority habitats. Further working in this area would therefore contribute positively to the planned restoration and habitat creation in this area at a large scale which combined with existing restoration plans would have significant beneficial cumulative effects for the local community as well as on nature conservation. However, such benefits would be in the long-term as mineral works are likely to take years before the restoration plans are implemented.

Although the area is generally well located in terms of proximity to markets, some sites may not be close to the markets thereby increasing distances materials are moved. This further contributes to the negative effect of increasing GHG emissions where road transport is used as well as the negative effects associated with HGV movements including noise, air pollution and congestion.

Option 1b

Option 1b seeks to concentrate working in the south east of Oxford. This option would lead to a concentration of impacts on communities living within or in close proximity to the identified resource areas. The broad location is in close proximity to most of the main areas of demand - Oxford, Didcot, Wantage, Grove as well as the centres of employment (apart from Bicester). Although it could lead to some sites not being as close to main areas of demand, the general location is judged to be well located for serving most of the demand areas. Restoration following working would lead to beneficial effects for biodiversity as well as creating recreational opportunities for the local communities. Working resource area 13 could have negative effects on archaeology as significant archaeological remains have been identified here. However, it is expected that mitigation measures would be required prior to planning permission being granted therefore reducing potential adverse impacts. The southern area of this option also lies close to the AONB which would present constraints to mineral working in this part.

Option 1c

This option divides the sand and gravel requirement equally between the resource areas in option 1a and 1c (with the exception of RAS 9). This division would lead to a distribution of impacts of mineral working on a small number of local communities in both areas as opposed to more communities in one area as options 1a and 1b would lead to. This has the benefit of relieving some communities especially in areas where

communities have already experienced mineral working in the past. Compared to options 1a and b, this option performs better in terms of proximity to markets as it covers a wider area as opposed to the north west/west in option 1a or south east in option 1b.

However, this option is also characterised by some of the effects and constraints identified for options 1a (cumulative effects on some communities, road network and nature conservation constraints) as well as those identified for option 1b (landscape and archaeology constraints). Ultimately, the significance of impact will depend on the exact location of sites within the broad areas and the mitigation measures put in place through the planning application process.

Sharp sand and gravel – the dispersal option

This option seeks to disperse mineral extraction close to the main areas of demand in a way that minimises the effects of mineral extraction in any one area of the County. Although it does not eliminate the negative effects associated with mineral extraction, distributing them would have positive effects on communities where extraction has previously taken place as well as minimising the overall negative effects felt by any single community. This option would however lead to more communities being affected by mineral working as more areas would be brought forward for extraction (although the effects are likely to be reduced compared to concentration based options).

Distributing extraction also has the advantage of reducing distances aggregates are moved thereby minimising emissions and mitigating against climate change. Reducing the distances travelled would have the added benefit of minimising other negative impacts associated with HGV movements including impact on air quality and noise. Moving minerals for shorter distances would also lead to positive financial effects on industry through cost savings on transport. However, this option would also have a negative economic effect by requiring new investment in infrastructure on new sites as opposed to taking advantage of existing infrastructure. It would also lead to job losses although new jobs would be created elsewhere in the County.

As with all options, the dispersal option offers opportunities for beneficial restoration although it does not offer the potential to contribute to large scale habitat creation as works would be spread in different parts of the County. Overall, although this option has some beneficial environmental effects (distributing effects and reducing distances travelled), it also has some draw backs in economic and restoration factors (social) and this needs to be balanced against the environmental benefits.

Sharp sand and gravel – the phasing option

This option has a balanced effect on most of the SA objectives in that although it reduces mineral working in areas that have historically experienced extraction, it also introduces new areas of working and so transfers the impacts to other communities including some more remote areas and a stretch of the River Thames valley that has not been previously worked.

The phasing approach adopts a long term approach which will allow time for the phasing and introduction of new areas and it also seeks to adopt a master planning approach. This has potential benefits in facilitating a co-ordinated restoration and after-use plan in current areas of working as well as ensuring that potential adverse effects identified in the proposed new areas of working are adequately addressed and mitigation measures put in place to minimise negative effects.

This approach also provides certainty to industry and allows the time necessary for the development of new infrastructure in the new areas of work. New and improved infrastructure however requires further investment which is likely to have a negative financial effect on industry. The long lead times however can help mitigate against adverse financial implications by allowing companies time to wind down and set up new operations.

Some of the new areas are not well located with regard to proximity to the strategic road network and this would also require significant improvements to provide adequate access. As above, the long-term planning approach would help to deliver such

infrastructure.

The extension of current works will lead to cumulative effects in already affected areas throughout the plan period. Although this is taken to be 'short-term' it is recommended that detailed assessment of existing sites (and nominations for extensions) is undertaken to assess which areas are best suited to sustainably support further working as some areas may be close to reaching or may have reached their 'environmental' capacity for example in terms of the road network, impact on amenity etc. Assessment on 'environmental' capacity should be required at the planning application stage.

Some areas e.g. RAS 4 are not well located in relation to potential markets and development here will lead to increase in distances travelled which in turn leads to increased GHG emissions and other negative effects associated with road based transport including noise, air pollution and congestion. Significant archaeological effects have also been identified in RAS13 and mitigation measures would be required to minimise potential adverse effects in this area. To off-set some of the negative effects of road transportation, opportunities to use the River Thames to move materials in RAS 4 should be maximised wherever possible.

Overall, the option has both beneficial and some negative effects. However, the negative effects can be mitigated against (apart from the issue relating to the proximity of RAS 4 to markets) through the planning process.

Soft sand

When assessed against the SA objectives, although the option will have some negative effects especially with regard to impacts on amenity and the environment, if working is to be carried out based on the current levels of production then these effects (on the natural and built environment) are judged to be neutral as the baseline will remain the same.

However, given that working has been going in this locality for a long time, future working in the same area will have negative cumulative effects on some of the local communities. To mitigate against such cumulative effects becoming adverse, it will be important to ensure future extensions are located away from sensitive receptors e.g. settlements (Hatford and Tubney) as well as being located in close proximity to the strategic road network.

This option has economic benefits as it takes advantage of existing infrastructure as well as providing certainty to industry and meeting local needs for soft sand. Overall, with adequate mitigation measures at the planning stage, this option has potential to continue meeting Oxfordshire's soft sand needs in a sustainable manner.

Crushed rock

When assessed against the SA objectives, this option is judged to have neutral effects on impacts against the natural and built environment (assuming future working was to be in line with current production levels and that any new working in the south west Bicester area would be small-scale).

However, in the long term, there will be cumulative effects of continued working on the communities living near the identified areas. These may include cumulative effects on the landscape as well as on local amenity – air, noise, and dust and traffic impacts.

Mitigation measures at the planning application stage can help ensure that such effects are adequately addressed before new permissions are granted. There are some economic advantages in retaining working in the identified areas including use of existing infrastructure and meeting Oxfordshire's crushed rock needs in line with regional policy.

C.4 Minerals Spatial Strategy Revised Options (September 2010)

Following consultation on the Minerals Spatial Strategy Options with key stakeholders in July 2010, refinements were made resulting in the development of revised options in

September 2010. The key changes (as reported by Scott Wilson in the September 2010 SA Report) were as follows:

- The extent of the areas in each of the options has been reduced through an assessment of the realistically workable geological resource, using data from the BGS geological mapping of sand and gravel and Mineral Assessment Reports.
- Sites which are designated for their national environmental or landscape importance have been removed from the options, such as Special Areas of Conservation (SACs), Areas of Outstanding Natural Beauty (AONBs) and National Nature Reserves (NNRs). Smaller sites such as Sites of Special Scientific Interest (SSSIs) and Scheduled Ancient Monuments (SAMs) which fall within these option areas will be given policy protection in the Core Strategy.
- The phased approach for sand and gravel has been changed to address the need for mineral working only during the plan period; and it focuses more on moving to new areas of working than on continuation of working in existing areas (albeit this would still be likely to be needed in the short term).
- Both the concentration on existing working areas approach and the new areas of working approach for sand and gravel are concentration strategy options; and are not related to the location of demand. (Location of demand will be a factor to be used in assessing the options rather than in defining them.)
- Possible new areas of working are not included in the same option as concentration on existing working areas, to provide greater distinction between options.
- The dispersed working approach for sand and gravel seeks to disperse working across all available resource and is not related to the location of demand.

The revised options were as follows:

Sharp sand and gravel

Following the revocation of the South East Plan the Council were guided to work with the aggregates apportionment in the March 2010 Proposed Changed to South East Policy M3, which set a sand and gravel figure of 2.1 mtpa for Oxfordshire. The Council opposed the figure, believing it to be unreasonably and unrealistically high, intending to gather information and evidence, and develop a methodology to produce a locally derived assessment of the quantity of sand and gravel that should be supplied. As an interim approach they adopted a flexible approach with regard to the amount of sand and gravel it needed to plan for, to meet demand to 2026, using a range between 1.1 and 1.6 mtpa.

Option 1: Concentration on Existing Working Areas

This option seeks to concentrate sand and gravel working in areas where working is currently taking place or has taken place recently. This is a refinement of the previous option 1c and includes areas both to the west / north-west and south / south-east of Oxford. However, these are now limited to areas around existing or recent sand and gravel working areas and include:

- Lower Windrush Valley (LWV);
- Eynsham/Cassington/Yarnton (ECY);
- Radley; and
- Sutton Courtenay.

Option 2: Concentration on New Working Areas

Many areas of existing working have experienced mineral extraction over a number of years, impacting on local communities and changing the local landscape. This option identifies new areas where working would be concentrated, to replace existing areas of working. In the short term, while the new areas are planned, some extensions to existing sites might be needed to maintain supply. The areas included in this option are:

- Clanfield/Bampton;
- Warborough/Shillingford/Benson;
- Cholsey;
- Sutton/Stanton Harcourt; and
- Culham/Clifton Hampden/Dorchester (CCD).

Option 3: Dispersed Working

The initial draft dispersal option sought to disperse working related to markets, to reduce mineral miles. This option has been amended to provide for working to take place within any of the areas of potential sand and gravel resource, so that it is a truly dispersed option. The areas included in this option are:

- Finmere;
- Clanfield/Bampton;
- Lower Windrush Valley (LWV);
- Eynsham/Cassington/Yarnton (ECY);
- Faringdon;
- Radley;
- Sutton Courtenay;
- Warborough/Shillingford/Benson;
- Cholsey;
- Caversham;
- Culham/Clifton Hampden/Dorchester (CCD); and
- Sutton/Stanton Harcourt.

Soft sand

The soft sand option has been revised to now include an area of resource at Duns Tew in the north of the county. The area in the south west of the county has been reduced to two smaller areas located close the A420.

Crushed rock

The revised option is made up of three areas based around existing limestone working areas. The option also includes reducing the area of search identified near Ardley quarry in the north of the County. The areas included in the option are:

- South of Burford area;
- East of River Cherwell, North of Bicester; and
- East/south east of Faringdon.

A Sustainability Appraisal of the revised options was undertaken by consultants Scott Wilson (now URS), using the established SA Framework. The full findings of the SA can be found in the Minerals Spatial Strategy SA Report which is available via the Oxfordshire County Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

Significant positive effects were identified as follows:

- In relation to the transport SA objective for each of the sharp sand and gravel options, due to the potential for alternatives to road (rail and river);
- In relation to the land and soil quality SA objective for Option 1 for sharp sand and gravel, as restoration would contribute to the creation of large areas for wildlife conservation and improved recreational activities; and
- In relation to the 'contributing to minerals provision', 'promoting efficient use of natural resources', and 'economic growth' SA objectives for each of the sharp sand and gravel options, as well as the options for soft sand, and crushed rock.

Significant negative effects were identified for one of the SA objectives, related to local amenity, as Options 1 and 3 for sharp sand and gravel may result in cumulative effects on local communities living close to the proposed areas, where extraction is already taking place, or has taken place in the past. The SA notes that careful consideration of access and routing, as well as impacts on the local communities (congestion, noise and air) would be required at the site selection and planning application stages to facilitate mitigation of adverse effects where applicable.

A summary of the SA findings is provided below.

Box 3: Summary of the Revised Options SA (written by Scott Wilson (now URS))

Sharp sand and gravel – option 1

Seeking to concentrate extraction in areas where working is currently taking place or has taken place recently has the economic advantages of using existing infrastructure as well as labour force. It also presents opportunities for co-ordinated large-scale restoration projects which would in the longer term lead to beneficial effects for the local communities (through recreation and leisure opportunities) as well as for wildlife. However, this option has potential to lead to cumulative negative effects on the local communities especially with regard to traffic and amenity issues. The long-term nature of mineral works means that communities within/close to the identified areas will continue to experience the effects of mineral working for the foreseeable future.

Sharp sand and gravel – option 2

Opening up new areas for working has the positive benefit of relieving communities that have experienced mineral working for long periods in the past therefore distributing the impacts of mineral working to other parts of the county. This option transfers impacts to other communities although these are judged to be less significant compared to option 1 due to the cumulative nature of option 1 effects. This option would require some extensions to some existing sites and so there would still be some cumulative effects in these areas although these would be for a shorter period, compared with the long-term nature of option 1 cumulative effects. Option 2 would lead to creation of new jobs in the identified areas but it would also require industry to re-locate or build new infrastructure and although this could lead to some negative economic effects in the short term, in the long term the economic benefits are judged to be positive.

Sharp sand and gravel – option 3

Dispersing extraction has both positive and negative effects. Positive effects include potentially reducing the distances materials are moved, creation of new jobs, distributing of impacts around the county and offering restoration opportunities that could benefit communities in the longer term. The negative effects include the fact that more communities would be affected by the effects of mineral working (including some cumulatively as in option 1). This option has potential not to deliver large-scale restoration projects as works would be distributed in different parts of the county. The need for investment in new areas may impact negatively on industry e.g. moving infrastructure etc., but this is likely to be a short-term effect.

Soft sand

Identifying two areas of working in the south of the county and one in the north of the county will help minimise traffic impacts as well as spread the effects of soft sand working more equitably. However, there will be some cumulative effects on communities living close to existing sites and careful consideration should be given when identifying sites and allowing further extraction so as to minimise the overall effects of continued working in these areas. The two areas in the south west of the county have different quality sands and this option allows for the working of the two types of sand. Continuing with the existing pattern provides certainty to industry and also takes advantage of existing infrastructure.

Crushed rock

The revised crushed rock option would lead to a distribution of effects of crushed rock working in the county therefore potentially preventing adverse effects on a single locality. It also leads to a reduction in the area identified in the north of the county. This option takes advantage of existing infrastructure as well as continuing to provide local employment. This has positive economic benefits. In the long term, there is potential for negative cumulative effects on the communities living near the identified areas. Careful consideration should be given to the exact location of sites and works, relative to housing and other sensitive receptors to militate against potential negative effects.

C.5 Aggregates Apportionment Options (July 2011)

In order to inform the preparation of emerging policies on minerals supply, OCC commissioned consultants (Atkins) to produce a robust local assessment of the quantities of sand and gravel and crushed rock that need to be supplied from local quarries over the period to 2030. The assessment was also to consider the potential supply of secondary and recycled materials.

Four methods of predicting future aggregates demand in Oxfordshire were adopted by the consultants, and these together with the associated sub-regional apportionments are shown in Table C-3 below. This table also includes the Council's recommended apportionment (based on the average outcomes of methods 2 and 4) and the SE Plan apportionment.

Table C-3: Sub regional apportionment levels considered

Sub regional apportionments	Sand and gravel	Crushed rock	Secondary and recycled aggregates
Atkins method 1: 2003 sub-regional apportionment methodology on regional total of 11.12 mtpa	1.53	n/a	n/a
Atkins method 2: median past sales with smoothing	1.29	0.62	0.64
Atkins method 3: housing proxy for demand	1.58	0.81	0.88
Atkins method 4: population proxy for demand	1.23	0.64	0.69
OCC preferred/recommended (Cabinet Feb 2011)	1.26	0.63	0.67
SE Plan (May 2009)	1.82	1.0	0.9

URS (formerly Scott Wilson) undertook an SA of the six apportionment levels. As some of the levels were similar, some were grouped together to form single appraisal options. The following options were considered:

Sand and gravel

- Option 1 - apportionment levels 1.23mtpa, 1.26mtpa and 1.29mtpa (average 1.26mtpa)
- Option 2 - apportionment levels 1.53mtpa and 1.58mtpa (average 1.55 mtpa)
- Option 3 - apportionment level 1.82mtpa

The sharp sand and gravel figures were further sub-divided between sharp sand and gravel and soft sand on the basis of recent past production (80% sharp sand and 20% soft sand) as follows:

Sharp Sand:

- Option 1 - 1.01mtpa (80% of 1.26mtpa)
- Option 2 - 1.24mtpa (80% of 1.55mtpa)
- Option 3- 1.46mtpa (80% of 1.82mtpa)

Soft Sand:

- Option 1 - 0.25 mtpa (20% of 1.26mtpa)
- Option 2 - 0.31mtpa (20% of 1.55mtpa)
- Option 3- 0.36mtpa (20% of 1.82mtpa)

Crushed rock

- Option 1 - apportionment levels 0.62mtpa, 0.63mtpa and 0.64mtpa (average of 0.63mtpa)
- Option 2 - apportionment level 0.81mtpa
- Option 3 - apportionment level 1mtpa

Secondary and recycled aggregates

- Option 1 - apportionment levels 0.64mtpa, 0.67mtpa, 0.69mtpa (average 0.67mtpa)
- Option 2 - apportionment level 0.88mtpa and 0.9mtpa (average 0.9mtpa)

In order to undertake a comprehensive SA, the spatial implications of the various options were considered. These enabled the SA to broadly identify the potential impacts of working aggregates in the identified areas. Full details of the assessment methodology and its findings can be found in the SA of the Aggregates Apportionment Options which is available via the Oxfordshire County Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

Looking firstly at sharp sand and gravel, a summary of the assessment findings, for the broad areas identified for potential extraction and then for the apportionment options, is provided in the following boxes. None of the effects identified were considered to be significant.

Box 4: Summary of the SA of broad areas for sharp sand and gravel (written by Scott Wilson (now URS))

Lower Windrush Valley (LWV)

- *Potential for negative impacts on nature conservation and heritage designations (depending on the location of sites)*
- *Potential impacts on River Windrush*
- *Potential risk of flooding*
- *Transport impacts (air and noise pollution)*
- *Greenhouse house gas (GHG) emissions*
- *Positive economic and restoration impacts*
- *Overall negative cumulative impacts on amenity in the long term (visual, landscape, traffic, noise and air quality)*

Eynsham/Cassington/Yarnton (ECY)

- *Potential negative impacts on SSSI, SAC and River Evenlode/River Thames depending on the location of sites*
- *Transport impacts on the A40 and A44*
- *GHG emissions*
- *Positive economic and restoration impacts*
- *Overall negative cumulative effects on environment and local communities in the long term (visual and landscape, ground water, traffic)*

Caversham

- *Potential impacts on ground water and River Thames*
- *Transport impacts on the B478 and A4155 (congestion, air and noise pollution)*
- *GHG emissions*
- *Economic and restoration benefits*
- *Potential for negative cumulative effects (visual and landscape, water, transport, air quality and noise)*

Sutton Courtenay

- *Potential impacts on scheduled ancient monuments and River Thames depending on location of sites*
- *Economic and restoration benefits*
- *Transport impacts on the B4016*
- *GHG emissions*
- *Potential negative cumulative effects (visual, landscape and transport) in the short-medium term (to 2020)*

Cholsey

- *Potential impacts on the River Thames*
- *Well located close to markets*
- *Significant investment in infrastructure required*
- *Potential transport impacts on the A4130 and A4074*
- *Potential negative amenity effects on local communities*
- *Potential restoration benefits in the longer term depending on proposed future land uses*

Clifton Hampden

- *Well located close to markets*
- *Significant investment in infrastructure required*

- *Potential transport impacts on the A415 and A4074*
- *Potential negative amenity effects on local communities (traffic, visual, air quality and noise) depending on location of sites*
- *Potential restoration benefits in the longer term depending on proposed future land uses*

Stadhampton

- *Well located close to markets*
- *Significant investment in infrastructure required*
- *Potential transport impacts on the A4074*
- *Potential negative amenity effects on local communities*
- *Potential restoration benefits in the longer term depending on proposed future land uses*

Box 5: Summary of SA of apportionment options for sharp sand and gravel (written by Scott Wilson (now URS))

Sharp sand and gravel option 1

Nature conservation – Potential negative impacts within LWV and ECY due to presence of nationally important designations (SSSI, SAC).

Landscape character – Potential for local visual and landscape impacts in all areas depending on the location of sites.

Historic and built heritage – Potential for negative impacts in LWV and Sutton Courtenay due to presence of Scheduled Monuments.

Ground and surface water – Potential impacts on ground water in LWV, ECY and Caversham. Potential impacts on Rivers Windrush (LWV), River Evenlode (ECY) and River Thames (Caversham, Sutton Courtenay - up to 2020 and Cholsey post 2020).

Air quality – Potential for air pollution associated with HGV movements in all the areas.

Greenhouse gases – GHG emissions in all the areas due to transportation of materials by road.

Flood risk – Some parts of the proposed production area lie within high flood risk zones (LWV, ECY, Caversham and Sutton Courtenay). However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas.

Transport - Potential for negative transport impacts on the A40 (LWV, ECY), A 44 (ECY), A4155/B478 (Caversham) and B4016/A4130 (Sutton Courtenay – up to 2020). Post 2020, there is potential for negative transport impacts along the A4130 and A4074 associated with working in Cholsey.

Restoration – LWV and ECY offer opportunities for landscape wide restoration schemes. There are extensive Conservation Target Areas within the Lower Windrush Valley and there is extensive scope for restoration on a landscape scale, to contribute to national Biodiversity Action Plan targets. Other areas have potential for beneficial restoration impacts depending on the preferred land uses. Oxfordshire County Council encourages restoration to nature conservation and where land suitable for agriculture, it may be appropriate to restore to farmland.

Local Economy – All the areas are well located close to the markets and providing investment and job opportunities which support the local economy.

Cumulative effects – Due to continued working in LWV, ECY, Caversham there is potential for long-term cumulative effects on the environment and on the local communities. These include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and impacts on the water environment. In Sutton Courtenay, cumulative effects would be felt in the short-medium term (to 2020) after which production is planned to cease in this area.

Sharp sand and gravel option 2

Option 2 is similar to option 1 in - terms of potential impacts relating to LWV, ECY, Caversham and Sutton Courtenay (therefore option 1 impacts above apply). However, this option includes introducing working in Cholsey before 2020 and introduction of either Clifton Hampden or Stadhampton post 2020. This would have the additional potential impacts as follows:

- *Potential negative impacts on A4130 /A4074 (Cholsey- pre-2020 to 2030) and/or A415/A4074 (Clifton Hampden - 2020-2030) and/or A4074 (Stadhampton - 2020-2030).*
- *Significant investment in infrastructure in the Cholsey and/or Clifton Hampden/ Stadhampton which could lead to local job creation and support to the local economy.*
- *Potential negative amenity effects for communities around Cholsey and/or Clifton Hampden/Stadhampton depending on the location of sites.*

Sharp sand and gravel option 3

Option 3 is similar to options 1 and 2 in terms of potential impacts relating to LWV, ECY, Caversham and Sutton Courtenay (therefore the sustainability impacts identified for option 1 for these areas apply to option 3). However, this option includes introducing working in Cholsey before 2020 and either Clifton Hampden or Stadhampton before 2020 and continuing working in both Clifton Hampden and Stadhampton post 2020). This would have the following SA impacts:

- *Potential negative impacts on A4130/A4074 (Cholsey - pre 2020 -2030) and/or A415/A4074 (Clifton Hampden -pre 2020 -2030) and/or A329/A4074 (Stadhampton pre 2020 -2030).*
- *Significant investment in infrastructure in the Cholsey, Clifton Hampden and Stadhampton which could lead to local job creation and support to the local economy.*
- *Potential negative amenity effects for communities around Cholsey and/or Clifton Hampden/Stadhampton depending on the location of sites.*

Overall, the SA found that all of the options for sharp sand and gravel have potential for some impacts on the environment, as well as on the surrounding communities. However, option 3 includes working in more areas and early on in the plan period which means it is likely to have more sustainability impacts in the short/medium and longer term as identified above compared to options 1 and 2.

In terms of the assessment for the soft sand options, the Council identified that the strategy for working soft sand would be to concentrate production in three existing areas: South east of Faringdon, Tubney/Marcham/Hinton Waldrist, and Duns Tew. As for each of the three apportionment levels considered, production would be met in the above identified areas, the sustainability appraisal focused on identifying the key potential impacts associated with working in each area and providing an overall commentary on how the options performed in sustainability terms. The key issues identified for the broad areas proposed are outlined in the box below. No significant effects were identified.

Box 6: Summary of the SA of broad areas for soft sand (written by Scott Wilson (now URS))

Nature conservation – there are SSSIs close to all the identified areas. The Tubney/Marcham/Hinton Waldrist area is also close to Cothill Fen SAC.

Historic designations - There are Scheduled Monuments close to the Tubney/Marcham/Hinton Waldrist area.

Landscape - None of the identified sites is within AONB, however, there is potential for local visual and landscape impacts depending on the location of sensitive receptors

Transport - It is not envisaged that soft sand working in any of the identified areas would lead to significant increases in HGV traffic. However, there is potential for some negative impacts from increased traffic on the local roads including on the B4030/A260 (Duns Tew) and on the A420, A417, and B4508 (south east Faringdon and the Tubney/Marcham/Hinton Waldrist area).

Local economy - Working in the identified area provides some positive economic benefits and allows for use of existing infrastructure and networks.

Cumulative effects - In the long-term, there is potential for cumulative negative effects on the environment and local communities although these are not envisaged to be significant due to the quantities of soft sand produced.

The issues identified were considered relevant for each of the three apportionment levels. The SA did not identify significant differences between the options, as the overall difference in tonnage was not considered to be significant. However it was noted that, generally, low levels of production are likely to be associated with fewer overall environmental impacts compared with higher production levels, although higher production levels may reduce the need to import aggregates by road and the attendant environmental impacts. Therefore the lowest apportionment option (0.25 mtpa) was considered as likely to have lesser overall sustainability impacts, compared to the higher options (0.31 mtpa and 0.36 mtpa).

For crushed rock, the various apportionment levels would be met from working in the three existing areas of north of Bicester to the east of the River Cherwell, south of the A40 near Burford and south east of Faringdon. Similar to the soft sand assessment, the SA of the crushed rock apportionment options focused on identifying the key potential impacts associated with working in each area and providing an overall commentary on how the options would be likely to perform. The key issues identified for the broad areas proposed are outlined in the box below. No significant effects were identified.

Box 7: Summary of the SA of broad areas for crushed rock (written by Scott Wilson (now URS))

Nature conservation – The area north of Bicester (Ardley) and the areas east of Faringdon are constrained by the presence of SSSIs

Historic designations – There are scheduled ancient monuments within the area north of Bicester and close to the area east of Faringdon.

Landscape – There are no strategic landscape designations in any of the areas. However, there is potential for local landscape and visual impacts depending on the location of sites relative to sensitive receptors.

Transport – Increased working in any of the areas could have some local traffic impacts.

Cumulative effects - Continued working in the existing areas will result in cumulative effects over time on the local communities including on landscape and local amenity – noise, air, and dust and traffic impacts. However, these are not expected to be significant due to the proposed levels of working.

The identified issues were considered relevant to the three apportionment levels. For the purposes of the appraisal, it was assumed that a higher production rate has potential for greater overall negative environmental and community effects compared to the lesser apportionment options (however, it should be noted that the overall difference is unlikely to be significant as the difference between the three options is not considered to be significant) and that increasing the level of provision may have positive economic effects and may reduce the need to import some crushed rock into Oxfordshire.

Finally, looking at the apportionment for secondary and recycled aggregates the location of facilities to meet this is not yet known. The principle of the strategy for secondary and recycled aggregates provision is to make provision for permanent sites and for temporary facilities at aggregate quarries and inert waste landfill sites.

It was therefore not considered possible for the SA to take in to account the spatial implications of the apportionment options. The approach adopted for appraising the secondary and recycled aggregates was therefore to test them against the SA objectives and provide a commentary on the overall sustainability impacts associated with making provision based on the two options. A summary of the findings for secondary and recycled aggregates is provided in the following box.

Box 8: Summary of the SA of secondary and recycled aggregates (written by Scott Wilson (now URS))

There was uncertainty when assessing potential impacts on SA objectives relating to the natural and built environment (nature conservation, historic environment, landscape, air quality, water, flood risk and soil) due to the fact that it is currently not known where sites for aggregates recycling will be located in the County. It is expected however that the potential impacts on sensitive receptors would be adequately assessed at the planning application stage when more details on the location of sites is available.

Both options supported the SA objective on promoting efficient use of natural resources with the higher option (0.9 mtpa) judged to have a greater beneficial impact due to the high level of provision that would be provided. The two options would also be supportive of the local economy.

C.6 Waste Spatial Strategy Options (August 2011)

As part of its development of the waste strategy, the Council prepared spatial strategy options for all of the key waste streams. A Sustainability Appraisal of the options was undertaken by consultants URS (formerly Scott Wilson), using the established SA Framework. The options assessed are detailed in Table C-4.

Full details of the assessment methodology and the findings of the assessment can be found in the SA of the Waste Spatial Strategy Options which is available via the Oxfordshire County Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

Table C-4: Waste Spatial Strategy Options (August 2011)

Recycling of MSW
Option: Provision of a new facility to serve Banbury, to replace the existing temporary facility at Alkerton.
Residual Waste Transfer Stations
Option: Two transfer stations to serve Ardley EfW incinerator: one in Abingdon/Didcot/Grove area; and one in Witney/Carterton area.

Recycling of Commercial and Industrial (C&I) waste
Option 1: Concentration of additional provision at or close to Oxford.
Option 2: Additional provision at or close to large towns – Northern and southern.
Option 3: Additional provision at or close to large and smaller towns in northern, southern Oxfordshire.
Residual Treatment of C&I waste
Option 1: 1 large facility in the Abingdon/Didcot/Wantage and Grove area.
Option 2: 2 smaller facilities in the Abingdon/Didcot/Wantage and Grove and Witney area.
Recycling of Construction, Demolition and Excavation Waste (CDE)
Option 1: Concentration of additional permanent provision at or close to Bicester, Didcot and Wantage & Grove; and temporary facilities at landfill and quarry sites across Oxfordshire.
Option 2: Dispersal of Additional permanent provision at or close to Oxford and large and Smaller towns in: Northern Oxfordshire Southern Oxfordshire And Western Oxfordshire And temporary facilities at landfill and quarry sites where opportunities arise across Oxfordshire.
Option 3: Additional Permanent provision only at or close to Oxford and towns large and smaller towns in: Northern Oxfordshire, Southern Oxfordshire and Western Oxfordshire.
Landfill
Provision of approximately 3million cubic metres of capacity for disposal of inert waste that cannot be recycled, with priority given to use of inert waste to restore minerals workings.
Hazardous Waste – Landfill
Option 1: Additional provision: continue to rely on hazardous waste landfill facilities outside Oxfordshire, apart from disposal of nonreactive hazardous waste.
Option 2: Existing landfill- change one of Oxfordshire’s existing non-hazardous landfills to hazardous landfill.
Intermediate Level Radioactive Waste Storage
Option A: Storage at source of waste (Harwell and Culham)
Option B: Treatment and long term storage at Harwell pending transfer to a national disposal facility
Option C: Treatment and long term storage for waste from Oxon and storage for waste from Dorset Pending removal to a national facility
Low Level Radioactive Waste Management
Option A: Storage Temporary storage (if required) and disposal in a bespoke facility at Harwell; and at Culham
Option B: Temporary storage (if required) of waste at source of waste and disposal in a bespoke facility at Harwell.
Option C: Temporary storage (if required) of waste at source of waste disposal in a suitable off – site landfill in Oxfordshire.
Option D: Temporary storage (if required) of waste at source of waste and disposal in a suitable off-site landfill site outside Oxfordshire.

The SA identified significant adverse effects for the following options:

- For ‘Low Level Radioactive Waste Management’ Option D in relation to SA objective SA5 ‘greenhouse gas emissions’ and SA7 ‘transport’ as the assessment assumed that the landfill site outside of the County would be situated further from the sources of waste arisings when compared to in-county sites.

Significant positive effects were identified for the following options:

- For 'Recycling of MSW' related to SA11 'waste hierarchy', as the option makes additional provision for recycling; and
- For 'Residual Treatment of C&I waste', Option 1 in relation to SA12 'economic growth' as the option provides for economies of scale that would attract investment by the private sector.

C.7 Minerals Planning Strategy (September 2011)

In September 2011, OCC consulted on its Draft Minerals Planning Strategy. This strategy contained the Council's vision and objectives for minerals planning to the period 2030, along with a set strategic policies, and common policies (covering both minerals and waste development). All of the elements within the planning strategy were assessed against the objectives within the SA Framework. Table C-5 shows the draft policies that were assessed in the appraisal. The SA Report, with details of the assessment, can be accessed via the Oxfordshire County Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

Table C-5: Draft Minerals and Common Policies (September 2011)

Minerals
M1: Provision for secondary and recycled aggregates M2: Provision to be made for mineral working M3: Strategy for the location of mineral working M4: Aggregates rail depots M5: Mineral safeguarding M6: Restoration of mineral workings
Common Policies
C1: Flooding C2: Water environment C3: Environmental and amenity protection C4: Biodiversity and geodiversity C5: Landscape C6: Historic environment and archaeology C7: Transport C8: Rights of Way

Significant positive effects were identified for the following minerals policies:

- Policy M1 in relation to the SA objectives related to ghg emissions, land and soil quality, and waste hierarchy. The promotion of secondary and recycled aggregates to replace land won aggregates should minimise land take, thereby protecting high grade agricultural land and soil quality. In addition, temporary mobile units have the advantage of locating close to the source/end point, reducing transportation distances and subsequently reducing greenhouse gas emissions. Finally, encouraging use of secondary and recycled aggregates which might otherwise be disposed of to landfill will help the County move up the waste hierarchy.
- Policies M2 and M3 in relation to the SA objective related contributing to minerals needs, as these policies should help to ensure this is achieved by allowing for provision for mineral working to be made for aggregates.
- Policy M4 in relation to the SA objectives on air quality, ghg emissions, transport and economic growth, as the policy should help to reduce the volume of aggregates travelling on the local and strategic road network and safeguard the

necessary infrastructure to ensure that Oxfordshire can sustainably support its predicted economic growth.

- Policy M5 in relation to the SA objective related contributing to minerals needs and economic growth as this policy should ensure minerals are safeguarded for future use.
- Policy M6 in relation to the SA objectives related to biodiversity/geodiversity, landscape and the historic environment, water quality, transport, people and local communities, and land and soil quality. The requirement for prompt and phased restoration of mineral working sites for example could help to create new habitats, improve landscape character, have a positive effect on water quality, offer flood storage capacity, help to restore soil quality, provide new recreational facilities, all of which will have a positive effect on local communities. The requirement for restoration to be to an after-use appropriate to the capacity of the transport network could have a positive impact on minimising transportation impacts.

Significant positive effects were also identified for the following common policies: C1, C2, C4, C5, C6, C7 and C8, generally against their directly related SA objective (e.g. Policy C4: Biodiversity and geodiversity against SA1 'biodiversity'). No significant adverse effects were identified.

C.8 Waste Planning Strategy (September 2011)

In September 2011, OCC consulted on its Draft Waste Planning Strategy. This strategy contained the Council's vision and objectives for waste planning to the period 2030, along with a set strategic policies, and common policies (covering both minerals and waste development). All of the elements within the planning strategy were assessed against the objectives within the SA Framework. Table C-6 shows the draft policies that were assessed in the appraisal. The SA Report, with details of the assessment, can be accessed via the Oxfordshire County Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

Table C-6: Draft Waste and Common Policies (September 2011)

Waste
W1: The amount of waste to be provided for W2: Waste imports W3: Waste management targets W4: Provision of additional waste management capacity W5: Provision of additional waste management facilities W6: Sites for waste management facilities W7: Landfill W8: Hazardous waste W9: Radioactive waste W10: Safeguarding
Common Policies
C1: Flooding C2: Water environment C3: Environmental and amenity protection C4: Biodiversity and geodiversity C5: Landscape C6: Historic environment and archaeology C7: Transport C8: Rights of Way

Significant positive effects were identified for the following waste policies: W1 against SA11 'waste and minerals management' as the policy directly supports this objective, and W3 against SA10 'waste hierarchy' as the policy seeks to make provision for additional recycling, composting and recovery of resources and minimise disposal.

Significant positive effects were also identified for the following common policies: C1, C2, C4, C5, C6, C7 and C8, generally against their directly related SA objective. No significant adverse effects were identified.

C.9 Aggregates Apportionment Options Addendum (March 2012)

Following on from the Aggregates Apportionment Options considered in July 2011, two further options for sharp sand and gravel were assessed in March 2012. These options arose as a result of consultation responses received on the July 2011 report and consider the effect of reducing working in West Oxfordshire after 2020.

These two options were both based on the assumption that pre-2020, the apportionment would be drawn from the same areas as Option 1 from the July 2011 report (on the basis that this option has since been chosen as the preferred apportionment level (1.01mtpa) in Policy M2). However, post 2020 there were two possible spatial options for reducing the level of working in West Oxfordshire. Option 1b would result in reducing working in the LWV (0.25 mtpa) and ECY (0.18 mtpa), with the difference made up from sites from Cholsey, Clifton Hampden and Stadhampton. Option 1c would result in a reduced level of working in LWV (0.43mtpa), a cessation of working in ECY altogether (0.0mtpa), with the difference made up from sites in Cholsey, Clifton Hampden and Stadhampton. Further details of the options can be found in the Addendum SA Report which can be accessed via the Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>.

The following boxes provide a summary of assessment. The first provides a summary of the assessment for the broad areas identified for potential extraction, the second for the two apportionment options (plus option 1a, which has a number of minor amendments compared to the version reported in Box 5) and the third a comparison between three options (1a, 1b and 1c).

In terms of significant effects, the assessment note that Option 1b is likely to have more significant adverse effects on local communities than options 1a or 1c, as it includes working in five different areas, compared to four for the other options, and therefore would affect more local communities. Options 1b and 1c which see the shifting of the sand and gravel industry to south Oxfordshire provide an opportunity to generate significant new jobs and economic activity due to the construction of the substantial new infrastructure that would be required to service sites in Cholsey, Stadhampton and Clifton Hampden.

Box 9: Summary of the SA of broad areas for sharp sand and gravel (written by Scott Wilson (now URS))

Lower Windrush Valley (LWV)

- *Potential for negative impacts on nature conservation and heritage designations (depending on the location of sites)*
- *Potential impacts on River Windrush*
- *Potential risk of flooding*

- *Transport impacts (air and noise pollution)*
- *Greenhouse gas (GHG) emissions*
- *Positive economic and restoration impacts*
- *Overall negative cumulative impacts on amenity in the long term (visual, landscape, traffic, noise and air quality)*

Eynsham/Cassington/Yarnton (ECY)

- *Potential negative impacts on SSSI, SAC and River Evenlode/River Thames depending on the location of sites*
- *Transport impacts on the A40 and A44*
- *GHG emissions*
- *Positive economic and restoration impacts*
- *Overall negative cumulative effects on environment and local communities in the long term (visual and landscape, ground water, traffic)*

Caversham

- *Potential impacts on ground water and River Thames*
- *Transport impacts on the B478 and A4155 (congestion, air and noise pollution)*
- *GHG emissions*
- *Economic and restoration benefits arising from proposed after uses*
- *Potential for negative cumulative effects (visual and landscape, water, transport, air quality and noise)*

Sutton Courtenay

- *Potential impacts on scheduled ancient monuments and River Thames depending on location of sites*
- *Economic and restoration benefits*
- *Transport impacts on the B4016*
- *GHG emissions*
- *Potential negative cumulative effects (visual, landscape and transport) in the short-medium term (to 2020)*

Cholsey

- *Potential impacts on the River Thames*
- *Well located close to markets*
- *Significant investment in infrastructure required*
- *Potential transport impacts on the A4130 and A4074*
- *Potential negative amenity effects on local communities and recreational assets*
- *Potential restoration benefits in the longer term depending on proposed future land uses*

Clifton Hampden

- *Well located close to markets*
- *Significant investment in infrastructure required*
- *Potential transport impacts on the A415 and A4074*
- *Potential negative amenity effects on local communities (traffic, visual, air quality and noise) depending on location of sites*
- *Potential restoration benefits in the longer term depending on proposed future land uses*

Stadhampton

- *Well located close to markets*
- *Significant investment in infrastructure required*

- *Potential transport impacts on the A4074*
- *Potential negative amenity effects on local communities*
- *Potential restoration benefits in the longer term depending on proposed future land uses*

Box 10: Summary of SA of apportionment options 1a, 1b and 1c for sharp sand and gravel (written by URS)

Sharp Sand and Gravel Apportionment Option 1a

Nature conservation – Potential negative impacts within LWV and ECY due to presence of nationally important designations (SSSI, SAC).

Landscape character – Potential for local visual and landscape impacts in all areas depending on the location of sites. These impacts may reduce post 2020 in the Sutton Courtenay area in the longer term, as a result of cessation/reduced working in this area, depending on the location of the sites which cease operation, and the implementation of appropriate restoration schemes.

Historic and built heritage – Potential for negative impacts in LWV and Sutton Courtenay due to presence of Scheduled Monuments and archaeological remains in the LWV.

Ground and surface water – Potential impacts on ground water in LWV, ECY and Caversham. Potential impacts on Rivers Windrush (LWV), River Evenlode (ECY) and River Thames (Caversham, Sutton Courtenay - up to 2020 and Cholsey post 2020).

Air quality – Potential for air pollution associated with HGV movements in all the areas.

Greenhouse gases – GHG emissions in all the areas due to transportation of materials by road.

Flood risk - All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas.

Transport - Potential for negative transport impacts on the A40 (LWV, ECY), A 44 (ECY), A4155/B478 (Caversham) and B4016/A4130 (Sutton Courtenay – up to 2020). Post 2020, there is potential for negative transport impacts along the A4130 and A4074 associated with working in Cholsey.

Restoration – LWV and ECY offer opportunities for landscape wide restoration schemes. There are extensive Conservation Target Areas within the Lower Windrush Valley and there is extensive scope for restoration on a landscape scale, to contribute to national Biodiversity Action Plan targets. Other areas have potential for beneficial restoration impacts depending on the preferred land uses. Oxfordshire County Council encourages restoration to nature conservation and where land suitable for agriculture, it may be appropriate to restore to farmland.

Local Communities - There is potential for continued negative amenity effects on communities in LWV, ECY, and Caversham throughout the plan period. There may be additional negative amenity effects on local communities near Cholsey and Clifton Hampden or Stadhampton post 2020. In Sutton Courtenay, negative effects on local communities would be felt in the short-medium term (to 2020) after which production is planned to cease in this area although there may still be some negative amenity effects in the long term, until restoration schemes are established.

Local Economy – All the areas are well located close to the markets and providing investment and job opportunities which support the local economy. Significant investment in infrastructure would be needed in the Cholsey area, this could lead to local job creation and support to the local economy in this area.

Cumulative effects – Due to continued working in LWV, ECY, Caversham there is potential for long-term cumulative effects on the environment and on the local communities. These include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and impacts on the water environment. In Sutton Courtenay, cumulative effects would be felt in the short-medium term (to 2020) after which production is planned to cease in this area.

Sharp Sand and Gravel Apportionment Option 1b

Nature conservation – Potential negative impacts within LWV and ECY due to presence of nationally important designations (SSSI, SAC). These impacts may reduce post 2020 in the LWV as a result of reduced working in this area, depending on the location of the sites which cease operation and the implementation of appropriate restoration schemes.

Landscape character – potential for local visual and landscape impacts in all areas (when working commences/continues) depending on the location of sites. Sites in Cholsey are near to the AONB. These impacts may reduce post 2020 in the LWV and Sutton Courtenay areas in the longer term, as a result of cessation/reduced working in these areas, depending on the location of the sites which cease operation, and the implementation of appropriate restoration schemes.

Historic and built heritage – Potential for negative impacts in LWV, Sutton Courtenay and Stadhampton (if site SG09 comes into operation) due to the presence of Scheduled Monuments and the archaeological assessments for site SG-09 (Stadhampton) and in the LWV.

Ground and surface water – Potential impacts on ground water in LWV, ECY and Caversham. Potential impacts on Rivers Windrush (LWV), River Evenlode (ECY) and River Thames (Caversham, Sutton Courtenay - up to 2020 and Clifton Hampden or Stadhampton post 2020) and tributary to River Thames (Cholsey). Potential adverse impacts on ground water in LWV and the River Windrush would be expected to lessen with the reduction in working in this area post 2020, and on groundwater and the River Thames with cessation of working of Sutton Courtenay. This is particularly positive in relation to the LWV, as low flow in the River Windrush has been identified as an issue by the Environment Agency.

Air quality – Potential for air pollution associated with HGV movements in all the areas.

Greenhouse gases – GHG emissions in all the areas due to transportation of materials by road.

Flood risk – All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas.

Transport - Potential for negative transport impacts on the A40 (LWV, ECY), A44 (ECY), A4155/B478 (Caversham) and B4016/A4130 (Sutton Courtenay – up to 2020). Post 2020, there is potential for negative transport impacts along the A4130 and A4074 associated with working in Cholsey and A415/A4074 (Clifton Hampden) or A329/A4074 (Stadhampton). Negative transport impacts on the A40 should reduce to some extent post 2020 with the reduction of working of sites in the LWV.

Restoration – LWV and ECY offer opportunities for landscape wide restoration schemes. There are extensive Conservation Target Areas within the Lower Windrush Valley and there is extensive scope for restoration on a landscape scale, to contribute to national Biodiversity Action Plan targets. There are also Conservation Target Areas in ECY (Oxford Meadows) Cholsey (Thames Wallingford to Goring) and Sutton Courtenay (link Thames Radley to Abingdon with Thames Clifton to Shillingford). Other areas have potential for beneficial restoration impacts depending on the preferred land uses. Oxfordshire County Council encourages restoration to nature conservation and where land suitable for

agriculture, it may be appropriate to restore to farmland.

Local Communities - There is potential for negative amenity effects on communities near Cholsey and Clifton Hampden or Stadhampton post 2020. Negative impacts on local communities in the LWV should reduce to some extent post 2020 as a result of the halving of production in this area post 2020 although there may still be some negative amenity effects until restoration schemes are established. In Sutton Courtenay, negative effects on local communities would be felt in the short-medium term (to 2020) after which production is planned to cease in this area although again, there may still be some negative amenity effects in the long term until restoration schemes are established.

Local Economy - All the areas are well located close to the markets and provide investment and job opportunities which support the local economy. Significant investment in infrastructure in the Cholsey and Clifton Hampden or Stadhampton areas could lead to local job creation and support to the local economy in these areas. The Clifton Hampden and Cholsey areas would support growth in Didcot (Cholsey is also well located to the growth area of Wantage and Grove), Stadhampton could serve Oxford and Didcot to while the west Oxfordshire sites support growth in Oxford.

Cumulative effects - Due to continued working in LWV, ECY, Caversham there is potential for long-term cumulative effects on the environment and on the local communities in these areas, although these may reduce to some extent in the LWV as a result of the halving of production in this area post 2020. However cumulative adverse effects may start to be felt in South Oxfordshire post 2020 as a result of working commencing in Clifton Hampden or Stadhampton and Cholsey. Adverse cumulative impacts include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and impacts on the water environment. In Sutton Courtenay, cumulative effects would be felt in the short-medium term (to 2020) after which production is planned to cease in this area.

Sharp Sand and Gravel Apportionment Option 1c

Nature conservation - Potential negative impacts within LWV and ECY due to presence of nationally important designations (SSSI, SAC). These impacts may reduce post 2020 in the ECY as a result of cessation of working in this area, and reduce slightly in the LWV as a result of reduced working in this area, depending on the location of the sites which cease operation and the implementation of appropriate restoration schemes.

Landscape character - potential for local visual and landscape impacts in all areas (when working commences/continues) depending on the location of sites. Sites in Cholsey are near to the AONB. These impacts may reduce post 2020 in the ECY, LWV and Sutton Courtenay areas in the longer term, as a result of cessation/reduced working in these areas, depending on the location of the sites which cease operation, and the implementation of appropriate restoration schemes.

Historic and built heritage - Potential for negative impacts in LWV, Sutton Courtenay and Stadhampton (if site SG09 comes into operation) due to the presence of Scheduled Monuments, the archaeological assessment for site SG-09 (Stadhampton) and archaeological remains in the LWV.

Ground and surface water - Potential impacts on ground water in LWV, ECY and Caversham. Potential impacts on Rivers Windrush (LWV), River Evenlode (ECY) and River Thames (Caversham, Sutton Courtenay - up to 2020 and Clifton Hampden or Stadhampton post 2020) and tributary to River Thames (Cholsey). Potential adverse impacts on ground water in LWV and the River Windrush would be expected to lessen with the reduction in working in this area post 2020, and on groundwater and the River Thames with cessation of working of Sutton Courtenay. This is particularly positive in relation to the LWV, as low flow in the River Windrush has been identified as an issue by the Environment Agency.

Air quality - Potential for air pollution associated with HGV movements in all the areas.

Greenhouse gases – GHG emissions in all the areas due to transportation of materials by road.

Flood risk – All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas.

Transport – Potential for negative transport impacts on the A40 (LWV, ECY), A44 (ECY), A4155/B478 (Caversham) and B4016/A4130 (Sutton Courtenay – up to 2020). Post 2020, there is potential for negative transport impacts along the A4130 and A4074 associated with working in Cholsey and A415/A4074 (Clifton Hampden) or A329/A4074 (Stadhampton). Negative transport impacts on the A40 should reduce to some extent post 2020 with the reduction of working of sites in the LWV.

Restoration – LWV and ECY offer opportunities for landscape wide restoration schemes. There are extensive Conservation Target Areas within the Lower Windrush Valley and there is extensive scope for restoration on as landscape scale, to contribute to national Biodiversity Action Plan targets. There are also Conservation Target Areas in ECY (Oxford Meadows) Cholsey (Thames Wallingford to Goring) and Sutton Courtenay (link Thames Radley to Abingdon with Thames Clifton to Shillingford). Other areas have potential for beneficial restoration impacts depending on the preferred land uses. Oxfordshire County Council encourages restoration to nature conservation and where land suitable for agriculture, it may be appropriate to restore to farmland.

Local Communities – There is potential for negative amenity effects on communities near Cholsey and Clifton Hampden or Stadhampton post 2020. Negative impacts on local communities in the LWV should reduce to some extent post 2020 as a result of the lowering of production in this area post 2020. Negative impacts on local communities in the ECY should cease post 2020, as a result of the cessation of working in this area, although there may still be some negative amenity effects until restoration schemes are established. In Sutton Courtenay, negative effects on local communities would be felt in the short-medium term (to 2020) after which production is planned to cease in this area although again, there may still be some negative amenity effects in the long term until restoration schemes are established.

Local Economy – All the areas are well located close to the markets and provide investment and job opportunities which support the local economy. Significant investment in infrastructure in the Cholsey and Clifton Hampden or Stadhampton areas could lead to local job creation and support to the local economy in these areas. The Clifton Hampden and Cholsey areas would support growth in Dicot (Cholsey is also well located to the growth area of Wantage and Grove), Stadhampton could serve Oxford and Didcot to while the west Oxfordshire sites support growth in Oxford.

Cumulative effects – Due to continued working in LWV, ECY and Caversham there is potential for long-term cumulative effects on the environment and on the local communities in these areas, although these may reduce to some extent in the LWV as a result of the halving of production in this area post 2020. However cumulative adverse effects may start to be felt in South Oxfordshire post 2020 as a result of working commencing in Clifton Hampden or Stadhampton and Cholsey. Adverse cumulative impacts include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and impacts on the water environment. In Sutton Courtenay, cumulative effects would be felt in the short-medium term (to 2020) after which production is planned to cease in this area.

Box 11: Comparison of apportionment options 1a, 1b and 1c (written by URS)

Nature conservation – The three areas in south Oxfordshire are largely unconstrained by strategic nature conservations, so a shift towards working these areas would reduce

negative impacts on strategic nature conservations in west Oxfordshire (so options 1b and 1c would have less negative impacts than option 1a in this respect). There are extensive Conservation Target Areas within the Lower Windrush Valley so a reduction of working in these areas and the commencement of restoration programmes under options 1b and 1c could also assist to reduce negative impacts post 2020, by bringing forward this restoration earlier than option 1a.

Landscape character – None of the potential sites in these areas are directly in or adjacent to the AONB, although sites in Cholsey are near to the AONB. However there are potential for local visual and landscape character impacts in all areas (when working commences/continues) depending on the location of sites, so all options have potential adverse effects. However, option 1b includes working in five different areas, which is one more area than options 1a and 1c, which means it is likely to have on balance, more adverse sustainability impacts on local landscape character in the longer term across the county, compared to options 1a and 1c.

Historic and built heritage – There are scheduled ancient monuments and significant archaeological remains in the LWV and scheduled ancient monuments in the Sutton Courtney area. Reduction of working in the LWV under options 1b and 1c would therefore be likely to have less significant adverse effects with respect to this SA objective than option 1a.

Ground and surface water - Option 1b would have the least negative impacts on this SA objective in terms of reducing impacts on flow in the River Windrush, which is identified as an issue by the Environment Agency.

Air quality – There is potential for air pollution associated with HGV movements in all the areas and all three options. However, option 1b includes working in five different areas, which is one more area than options 1a and 1c, which means it is likely to have on balance, greater adverse impacts on air quality across the county in the longer term compared to options 1a and 1c.

Greenhouse gases – GHG emissions in all the areas due to transportation of materials by road and thus all options will have an adverse impact.

Flood risk - All of the areas identified have some parts of the proposed production areas within high flood risk zones. However, sand and gravel extraction is considered to be compatible development. Supporting infrastructure would however be at risk from flooding and should be located away from the high risk areas. However, option 1b includes working in five different areas, which is one more area than options 1a and 1c, which means it is likely to have on balance, more adverse sustainability impacts in terms of flood risk (as more local areas will be affected across the county) in the longer term compared to options 1a and 1c.

Transport - There may be negative cumulative impacts on road safety, congestion and road maintenance under all three options. A reduction of working in the LWV and ECY under options 1b and 1c would reduce congestion on the A40, which would have a positive impact. However if HGV vehicles from the Cholsey, Stadhampton and Clifton Hampden sites were using the road network around the growth areas of Oxford, Dicot and Wantage and Grove negative impacts may be concentrated in south Oxfordshire.

Restoration - Much of the sand and gravel resource in Oxfordshire is located along the Thames, Lower Evenlode and Lower Windrush river valleys, where Conservation Target Areas (CTA) have been identified. There are CTAs in all of the identified mineral working areas, with the exception of Clifton Hampden and Stadhampton. This presents an opportunity for sand and gravel quarry restoration to contribute to linking and developing the habitats in these conservation target areas. In this respect, options 1b and 1c offer the most beneficial impacts in terms of bringing this restoration work forward, post 2020.

Local Communities - Under all three options two areas in south Oxfordshire would be

identified to meet the required apportionment. This will have a negative local impact on the local communities in these areas, especially as all three of the potential areas are not currently subject to mineral working. The social impact of increasing the number of sites is generally to increase the number of local communities across the county which are affected by sand and gravel working. This is likely to lead to a negative impact on local amenity, road safety, noise, dust and visual impact of working for these communities. Option 1b is therefore likely to have more significant adverse effects on local communities than options 1a or 1c. Each of the options will have a slightly different distribution of impacts in terms of the communities that are affected. Options 1b and 1c would see a reduction in working in west Oxfordshire, reducing the cumulative impacts in this area where communities have been subjected to extensive working over a long period of time.

Local Economy - The economic impacts of redistributing the provision for sand and gravel away from west Oxfordshire (options 1b and 1c) may have a localised negative impact on jobs generated by the sand and gravel industry in west Oxfordshire, shifting the positive impacts of these jobs and economic activity towards south Oxfordshire. New sources of supply in south Oxfordshire, nearer to planned development in the south of the county would have a positive economic impact.

Cumulative effects - Due to continued working in LWV, ECV and Caversham there is potential for long-term cumulative effects on the environment and local communities in these areas up to 2020 and beyond under option 1a. However under options 1b and 1c negative cumulative impacts in west Oxfordshire would be expected to reduce post 2020, but may start to be felt in South Oxfordshire, as a result of working commencing in Clifton Hampden or Stadhampton and Cholsey. Adverse cumulative impacts include visual and local landscape impacts, air and noise pollution from HGV movements, traffic congestion, GHG emissions and impacts on the water environment. In all three options, cumulative effects would be felt in the short-medium term (to 2020) in Sutton Courtenay, after which production is planned to cease in this area.

C.10 Minerals and Waste Core Strategy Proposed Submission Document (May 2012) – subsequently withdrawn

In May 2012, OCC consulted on its Minerals and Waste Core Strategy Proposed Submission Document. This strategy contained the Council's vision and objectives for minerals and waste planning to the period 2030, along with a set of strategic policies for minerals and waste, and common policies (covering both minerals and waste development) (Table C-7).

Table C-7 Proposed Submission Policies (May 2012)

Minerals
M1: Provision for secondary and recycled aggregates
M2: Provision to be made for working aggregate minerals
M3: Locations for working aggregate minerals
M4: Aggregates rail depots
M5: Non-aggregate mineral working
M6: Safeguarding mineral resources
M7: Restoration of mineral workings
Waste
W1: The amount of waste to be provided for
W2: Import of non-hazardous waste
W3: Waste management targets
W4: Provision of additional waste management capacity
W5: Provision of additional waste management facilities
W6: Sites for waste management facilities

W7: Landfill
 W8: Hazardous and radioactive waste
 W9: Management of radioactive waste at Harwell and Culham
 W10: Safeguarding waste management sites

Common Policies

C1: Flooding
 C2: Water environment
 C3: Environmental and amenity protection
 C4: Agricultural land and soils
 C5: Biodiversity and geodiversity
 C6: Landscape
 C7: Historic environment and archaeology
 C8: Transport
 C9: Rights of Way

All of the elements within the document were assessed (by consultants URS) against the objectives within the SA Framework. The appraisal generally found that the policies supported the majority of the SA objectives, although there was some uncertainty identified, for example due to the unknown location of sites for waste management. Significant positive effects were identified for the following policies:

- Policy M1 in relation to the SA objectives related to ghg emissions (SA5), land and soil quality (SA9), and waste hierarchy SA10). The promotion of secondary and recycled aggregates to replace land won aggregates should minimise land take, thereby protecting high grade agricultural land and soil quality. In addition, temporary mobile units have the advantage of locating close to the source/end point, reducing transportation distances and subsequently reducing greenhouse gas emissions. Finally, encouraging use of secondary and recycled aggregates which might otherwise be disposed of to landfill will help the County move up the waste hierarchy.
- Policies M2, M3 and M5 in relation to the SA objective related contributing to minerals needs (SA11), as these policies should help to ensure this is achieved by allowing for provision for mineral working to be made for aggregates and non-aggregates.
- Policy M4 in relation to the SA objectives on transport (SA7) and economic growth (SA12), as the policy should help to reduce the volume of aggregates travelling on the local and strategic road network and safeguard the necessary infrastructure to ensure that Oxfordshire can sustainably support its predicted economic growth.
- Policy M6 in relation to the SA objective related contributing to minerals needs (SA11) as this policy should ensure minerals are safeguarded for future use.
- Policy M7 in relation to the SA objectives related to biodiversity/geodiversity (SA1), landscape and the historic environment (SA2), water quality (SA3), flooding (SA6), people and local communities (SA8), and land and soil quality (SA9). The requirement for prompt and phased restoration of mineral working sites for example could help to create new habitats, improve landscape character, have a positive effect on water quality, offer flood storage capacity, help to restore soil quality, provide new recreational facilities, all of which will have a positive effect on local communities.

- Policies W1 and W4 in relation to the SA objective related to enabling Oxfordshire to be self-sufficient in its waste management (SA11), as these policies directly support this objective by allowing for the necessary provision to achieve this aim.
- Policy W3 in relation to the SA objectives for ghg emissions (SA5) and waste hierarchy (SA10), due to the policy aim to reduce waste to landfill (resulting in less methane gas) and setting high targets for recycling and composting (moving the County up the waste hierarchy).
- Policy W5 in relation to the SA objectives related to enabling Oxfordshire to move up the waste hierarchy (SA10) and be self-sufficient in its waste management (SA11). This policy encourages the development of reuse, recycling, composting and other waste management facilities that will help to support these objectives.
- Policy W6 in relation to the objective on land and soil quality (SA9), as by encouraging the use of previously developed land and derelict land this can lead to the restoration of land especially, where land may have been previously contaminated.
- Policy W7 in relation to the objective related to enabling Oxfordshire to be self-sufficient in its waste management (SA11) as making local provision for inert landfilling and husbanding non-hazardous landfill will allow for self-sufficiency with respect to the disposal of waste via landfill.

A significant negative effect was identified for Policy M5 against SA3 'ground and surface water quality' as clay is usually located below sand and gravel and therefore could result in the modification of surface flows to watercourses and alteration of groundwater seepages, flushes or spring flows, particularly where there is the presence of underlying aquifers such as in the LWV and ECY areas.

The common policies were found to be broadly in line with the SA objectives, with significant positive effects being identified for C1, C2, C4, C5, C6, C8 and C9, generally for their related SA objectives.

The SA Report with full details of the assessment can be accessed via the Oxfordshire County Council website at:

<http://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy>

C.11 Oxfordshire Minerals and Waste Local Plan: Core Strategy Consultation Draft (February 2014)

A Draft Local Plan (Core Strategy) was prepared taking into consideration all the iterations to the emerging options and the consultation comments received on the previously submitted Pre Submission Core Strategy.

The appraisal approach utilised the SA/SEA Framework Objectives that were developed for the revised Sustainability Appraisal Scoping Report 2013. This SA Framework was subsequently updated as a result of comments received on the Scoping Report.

The criteria and assessment matrices used for undertaking the assessment were consistent with those used for previous rounds of sustainability appraisal on the minerals and waste planning documents, undertaken by the consultants URS. The policies included in the Consultation Draft plan are listed in Table C-8.

Table C-8 Core Strategy Consultation Draft Policies (February 2014)

Minerals
M1: Recycled and secondary aggregate M2: Provision for working aggregate minerals M3: Locations for working aggregate minerals M4: Working on aggregate minerals M5: Aggregate rail depots M6: Non-aggregate mineral working M7: Safeguarding mineral resources M8: Restoration of minerals workings
Waste
W1: Management of Oxfordshire waste W2: Management of waste from other areas W3: Diversion of waste from landfill W4: Waste management capacity requirements W5: Locations for waste management facilities W6: Siting of waste management facilities W7: Landfill W8: Hazardous waste W9: Management of radioactive waste W10: Waste water and sewage sludge W11: Safeguarding waste management sites
Common Policies
C1: Sustainable development C2: Climate Change C3: Flooding C4: Water environment C5: Environmental and amenity protection C6: Agricultural land and soils C7: Biodiversity and geodiversity C8: Landscape C9: Historic environment and archaeology C10: Transport C11: Rights of Way

As the contents of the Core Strategy Consultation Draft (2014) and the SA undertaken on that document are closely aligned with the Proposed Submission Document (2015) only a brief summary of the findings of the SA are provided below. Section 6 of the SA Report (July 2015) provides the details of the findings of the new assessment.

All of the elements within the document were assessed against the objectives within the SA Framework. The appraisal generally found that the policies were likely to have overall positive effects across the different sustainability objectives.

A number of significant positives were identified:

Policy M1 in relation to the SA objectives on land and soil quality (SA9) and waste hierarchy (SA10).

Policy M2 in relation to the objective on waste and mineral management (SA11).

Policy M3 in relation to the objective on waste hierarchy (SA10).

Policy M5 in relation to the SA objectives on transport (SA7) and economic growth (SA12).

Policy M6 in relation to the objective of flooding (SA6).

Policy M7 in relation to the objective on waste and mineral management (SA11).

Policy M8 in relation to the SA objectives on biodiversity and geodiversity (SA1); landscape and the historic environment (SA2); ground and surface water quality (SA3) and people and local communities (SA8).

Policy W1 in relation to the objective on waste and mineral management (SA11).

Policy W3 in relation to the SA objectives on greenhouse gas emissions (SA5) and waste hierarchy (SA10).

Policy W4 in relation to the objective on waste and mineral management (SA11).

Policy W6 in relation to the objective on land and soil quality (SA9).

Policy W7 in relation to the objective on waste and mineral management (SA11).

The common core policies were found to be broadly in line with the SA objectives, with significant positive effects being identified for C2, C3, C4, C5, C6, C7, C8, C10 and C11 generally for their related SA objectives.

No significant negative effects were identified.

The full findings for the assessment of the Consultation Draft Core Strategy are provided in Section 6 of the SA Report (February 2014). This report can be accessed via the Oxfordshire County Council website at:

<https://www.oxfordshire.gov.uk/cms/content/minerals-and-waste-core-strategy#revisedminerals>