

CLIENT PROJECT REPORT CPR2366

Oxfordshire Minerals and Waste Local Plan: Part 1 - Core Strategy incorporating Proposed Main Modifications

Sustainability Appraisal Report Update

February 2017

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Prepared for:	Oxfordshire County Council, Minerals and Waste Policy Team
Authors:	K Millard and R Gardner
Quality approved:	R Gardner

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1 Introduction

1.1 Background

Oxfordshire County Council is currently reviewing its planning policies for mineral working and waste management and a new Oxfordshire Minerals and Waste Local Plan (MWLP) is being produced.

The new MWLP will provide the planning strategies and policies for the development that will be needed up to 2031 for the supply of minerals and the management of waste in Oxfordshire. Oxfordshire Minerals and Waste Local Plan: Part 1 - Core Strategy will set out strategic policies to guide minerals and waste development over the plan period and core policies which address development management issues relevant to both minerals and waste. It will be followed at a later stage by the Oxfordshire Minerals and Waste Local Plan Part 2 - Site Allocations Document.

In December 2015 the Council submitted the Minerals and Waste Local Plan Part 1 - Core Strategy (henceforth referred to in this document as 'the Core Strategy') and an accompanying Sustainability Appraisal Report (SA Report) to the Secretary of State for Examination by an independent planning inspector. The Examination Hearings were held in September 2016 and the Inspector issued an Interim Report in October 2016.

During the Examination hearing sessions and within the Interim Report, the Inspector requested that the Council undertake some further work to consider reasonable alternatives relating to both the minerals and waste strategies in order to address some procedural issues and to inform the further development of the final policies that will be included in the Core Strategy.

The consideration and assessment of alternatives has now been undertaken and that process has resulted in the Council preparing a series of Proposed Main Modifications to the minerals and waste strategies in the Core Strategy. The Council has also proposed Main Modifications that cover other areas of the Core Strategy's policies and supporting text which were not considered in the assessment of alternatives. In addition the Council are proposing a series of Additional Modifications which are more minor changes such as factual updates and corrections or textual changes for clarifications.

All the proposed Main Modifications and the reasonable alternatives to them, as well as the Additional Alternatives, have been subject to the SEA/SA process. The proposed Main Modifications and Additional Modifications will be subject to consultation accompanied by an SA Report Update (this report).

1.2 Strategic Environmental Assessment and Sustainability Appraisal

Under separate regulations the Core Strategy must be subject to both Sustainability Appraisal and Strategic Environmental Assessment, as described below.

1.2.1 Strategic Environmental Assessment

The SEA Directive[1] requires that a formal Strategic Environmental Assessment (SEA) is undertaken for all plans and programmes which are likely to have significant effects on the environment. It aims:

"…to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a

[1] European Directive 2001/42/EC, known as the Strategic Environmental Assessment (SEA) Directive

view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment" (Article 1).

The Directive defines environmental assessment as a procedure comprising:

- The preparation of an Environmental Report on the likely significant effects of the draft plan or programme;
- Carrying out consultation on the draft plan or programme and the accompanying Environmental Report;
- Taking into account the Environmental Report and the results of consultation in decision making; and
- Providing information when the plan or programme is adopted showing how the results of the environmental assessment have been taken into account.

SEA is required to be undertaken alongside the preparation of the plan to which it relates to allow strategic alternatives to be formally incorporated into it at the earliest opportunity. The SEA Directive has been transposed into UK legislation[2].

1.2.2 Sustainability Appraisal

Under the Planning and Compulsory Purchase Act 2004, Sustainability Appraisal (SA) is required to be undertaken during the preparation of a Local Plan (or in this case, Core Strategy).

Whilst SEA focuses on the environmental effects of a plan, Sustainability appraisal considers a plan's wider economic and social effects in addition to its potential environmental impacts.

1.2.3 Integrating the SEA and SA Processes

Both the SA and the SEA processes help planning authorities to fulfil the objective of contributing to the achievement of sustainable development in preparing their plans through a structured assessment of the objectives and Local Plans against key sustainability issues. The joint processes should ensure that the environmental, social, and economic implications are fully integrated into emerging policies and strategies.

Although the requirement to carry out both an SA and SEA is mandatory, it is possible to satisfy the requirements of both pieces of legislation through a single appraisal process. Government guidance for undertaking SEA and for SA of Development Plan Documents in particular outlines how the SA and SEA can be integrated into one process. The final output of the process is a combined Sustainability Appraisal and SEA Environmental Report which meets the regulatory requirements for SA and SEA and which will be published alongside the plan. For simplicity this report is referred to as the SA Report.

1.2.4 Meeting the requirements of the SEA Directive

The SEA Regulations require the Environmental Report to clearly document findings of all stages of the SEA/SA process. The Report should show that the SEA Directive has been complied with and all components that meet these requirements should be easily identifiable. The requirements and how they have been met are shown in Table 1-1.

[2] The Environmental Assessment of Plans and Programmes Regulations 2004 (SI1633)

Table 1-1: SEA Regulations requirements checklist

Preparation of environmental report (regulation 12)	How met in this SA Report
Preparation of an environmental report that identifies describes and evaluates the likely significant effects on the environment of implementing the plan or programme and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme (regulation 12(2)). The report shall include such of the information referred to in Schedule 2 as may reasonably be required, taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in the process to avoid duplication of the assessment (regulation 12(3)). Information may be provided by reference to relevant information obtained at other levels of decision-making or through other EU legislation (regulation 12 (4)). The information referred to in Schedule 2 is:	
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes.	Sections 2 and 3. Appendix A (Scoping Report)
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.	Section 3. Appendix A (Scoping Report)
c) The environment characteristics of areas likely to be significantly affected.	Section 3. Appendix A (Scoping Report) and Appendix F (Policy Assessment)
d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 2009/147/EC (Conservation of Wild Birds) and 92/43/EEC (Habitats Directive).	Section 4
e) The environmental protection objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.	Section 3. Appendix A (Scoping Report)
f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscapes and the interrelationship between the above factors. These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.	Sections 5, 6, 7 and Appendices C, D, E, F and G
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.	Section 7
h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.	Section 5 and Appendices C and D
i) A description of measures envisaged concerning monitoring in accordance with regulation 17.	Section 9
j) A non-technical summary of the information provided under the above headings.	A separate Non-Technical Summary (NTS) document has been produced to summarise the information included in this SA Report.

1.2.5 SEA/SA for the Oxfordshire Minerals and Waste Plan

During the development of the minerals and waste planning documents the SEA/SA process has been undertaken both internally by OCC officers, and externally by appointed consultants. Between 2010 and 2012 the SEA/SA was undertaken by the consultants URS (formerly Scott Wilson). From November 2013 onwards the SEA/SA has been undertaken by TRL Ltd – the authors of this report, with consultants Land Use Consultants (LUC) also undertaking SEA/SA in Nov/Dec 2016 relating to alternatives for the minerals and waste strategies during the development of the Main Modifications.

The original SEA/SA work undertaken by URS was subject to both review and approval by OCC officers and to wide consultation. Where appropriate it is therefore integrated within this SA Report as it has provided the basis for the SEA/SA work undertaken from late 2013 onwards.

1.3 Purpose of this SA Report Update

This SA Report Update documents the findings of the SEA/SA that has been undertaken on the Oxfordshire Minerals and Waste Local Plan: Part 1 – Core Strategy (the Core Strategy). It builds on the SA Report (August 2015) that was submitted for Examination alongside the Core Strategy by providing information on the SEA/SA processes that have been undertaken following the Examination hearing sessions and prior to the consultation on proposed Main Modifications to the Core Strategy.

This SA Report Update is a new stand-alone report and therefore repeats much of the information that was included in the SA Report (August 2015). In order to aid the reader, relevant sections of this report and its appendices include boxes containing the ▞ symbol that describe how the SEA/SA has been updated in the Post-Examination Hearings stage. An illustration of this concept is provided below:

▞ Post-Examination Hearings update

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1.4 Structure of this SA Report

Section 1 (this section) provides background on the SEA/SA and plan making processes and provides information on the work undertaken to date, as well as providing a summary of consultation and the Habitats Regulations Assessment processes.

Section 2 provides information on the Core Strategy, including the MWLP's visions and objectives for minerals and waste planning, as well as describing the post-Examination plan-making activities.

Section 3 describes the environmental and sustainability planning context, including the relationship of the Core Strategy with other plans and programmes and baseline information.

Section 4 outlines the environmental and sustainability issues that have been identified and presents the SA framework that has been developed to undertake the assessment activities. The section also considers the compatibility of the SA framework objectives with the Core Strategy's minerals and waste planning objectives.

Section 5 provides information on how alternatives have been considered in the plan-making process, including at the post-Examination Hearings stage.

Section 6 presents the findings of the screening assessment of the proposed Main Modifications and Additional Modifications.

Section 7 provides a summary of the findings of the detailed assessment that has been undertaken on the Core Strategy incorporating Main Modifications.

Section 8 describes how the SEA/SA has influenced the development of the Core Strategy.

Section 9 provides information on the proposed measures for monitoring the effects of the Core Strategy once it has been adopted.

Section 10 describes the next steps in the process, as well as providing information on how to respond to the consultation process.

A Non-Technical Summary (NTS) has been prepared as part of the SA Report Update. The NTS provides a summary of the information provided in the sections described above.

1.5 SEA/SA Stages

The key stages of the SEA/SA process and when they have been undertaken during the development of the Core Strategy are broadly presented in Table 1-2.

Table 1-2: Stages in the SEA/SA and Oxfordshire MWLP

Oxfordshire MWLP	SEA/SA Stages	Dates
Begin document preparation	Stage A: Setting the context, establishing the baseline and deciding on the scope. A1: Identify other relevant policies, plans and document programmes, and sustainability objectives. A2: Collecting baseline information. A3: Identifying sustainability issues and problems. A4: Developing the SA framework. A5: Consulting on the scope of the SA (**Scoping Report**).	Consultation on the SA Scoping Report. August 2005. Consultation on the revised SA Scoping Report. April/May 2009. SA Scoping Report revised. May 2011. Consultation on the revised SA Scoping Report. December 2013/January 2014. SA Scoping Report update March-August 2015.
Preparation of Issues and Options (I&O) paper and consultation **Preparation of preferred options, including consultation on possible preferred option**	Stage B: Developing and refining options and assessing of effects. B1: Testing the DPD objectives against the SA framework. B2: Developing the DPD options. B3: Predicting the effects of the DPD. B4: Evaluating the effects of the DPD. B5: Considering ways of mitigating adverse effects preferred and maximising beneficial effects. B6: Proposing measures to monitor the significant effects of implementing the DPDs.	Consultation on Minerals and Waste Core Strategy (Issues and Options) and Interim SA Report. June 2006. Consultation on the Minerals and Waste Core Strategy (Preferred Options). February 2007. Preparation and then consultation on the SA of the Minerals and Waste Core Strategy (Preferred Options). February 2007. Preparation of the SA of the Minerals Spatial Strategy Options. May 2010. Preparation of the SA of the Revised Minerals Spatial Strategy Options. September 2010. Preparation of the SA of the Aggregates Apportionment Options. July 2011. Preparation and then consultation on the SA of the Minerals Preferred Strategy. August - October 2011. Consultation on the Minerals Planning Strategy Consultation Draft. September/October 2011. Preparation and then consultation on the SA of the Draft Waste Planning Strategy. September - October 2011. Consultation on the Waste Planning Strategy Consultation Draft. September/October 2011. Preparation of the SA of the Aggregates Apportionment Options – Addendum Report. March 2012. Preparation of the SA Report of the Proposed Submission Core Strategy. March 2012. Preparation of the Consultation Draft Core Strategy. 2013.

Public consultation on Preferred options and Development of the Core Strategy	Stage C: Preparing the Sustainability Appraisal Report. C1: Preparing the **SA Report**.	Preparation of the SA Report of the Proposed Submission Core Strategy. March 2012. Preparation of the SA Report of the Consultation Draft Local Plan. January – February 2014. Preparation of the SA Report of the Proposed Submission Local Plan – August 2015.
	Stage D: Consulting on the preferred options of the DPD and SA Report. D1: Public participation on the preferred options of the DPD and the SA Report. D2 (i) Appraising significant changes. D2 (ii) Appraising significant changes resulting from representations. D3: Making decisions and providing Information.	Consultation on the Proposed Submission Core Strategy and accompanying SA Report. May – July 2012. Consultation on the Consultation Draft Local Plan and accompanying SA Report. February – April 2014. Consultation on the Proposed Submission Local Plan and accompanying SA Report. Aug – Sept 2015.
Submission of Core Strategy to Secretary of State		Preparation and consultation on the SA Report Addendum. April – June 2016. Preparation of SA Report 2nd Addendum. August 2016. Preparation of SA Report Update, January 2017 (***this report***) Consultation on the Proposed Main Modifications and accompanying SA Report Update. Feb – Mar 2017.
Adoption of the Core Strategy	Stage E: Monitoring the significant effects of implementing the DPD. E1: Finalising aims and methods for monitoring. E2: Responding to adverse effects. Preparing the **SEA Statement**.[1]	SA Statement (on adoption). Indicative timing: Summer 2017

[1] The SEA Statement is required by the SEA Regulations.

1.6 Consultation

The SEA Directive requires consultation at various stages of the SA process, as indicated in Table 1-2. To date consultation has been undertaken at several stages as outlined below.

The first round of consultation was undertaken at the end of the scoping stage in August 2005. The aim of the scoping consultation was to ensure that all the relevant issues were identified and discussed at an early stage of the process so that they could be addressed during the SA and plan making.

In June 2006, consultation was undertaken on the Minerals and Waste Core Strategy Issues and Options, and the accompanying Interim SA Report. This was then followed in 2007, by consultation on the Minerals and Waste Core Strategy (Preferred Options), and the accompanying SA.

A further round of Scoping occurred in 2009, with a revised Scoping Report being consulted upon in April 2009. Details of the consultation, along with a summary of the comments received and how they have been addressed are included in Appendix A of the SA of the Pre Submission Minerals and Waste Core Strategy (March 2012).

During September and October 2011, consultation was carried out on the SA Reports of the Minerals and Waste Preferred Strategies. Details of the consultation, along with a summary of the comments

received and how they were addressed are included in Appendix A of the SA of the Pre Submission Minerals and Waste Core Strategy (March 2012).

In May 2012, consultation was carried out on the SA Report of the Minerals and Waste Proposed Submission Document. The list of those who responded to this consultation, along with a summary of the comments received and how they have been addressed are included in Appendix B1.

A further revised version of the Scoping Report was consulted upon in December 2013/January 2014. The list of those who responded to the consultation, along with a summary of the comments received and how they have been addressed is included in Appendix B2 of this report.

The next round of consultation on the Oxfordshire Minerals and Waste Local Plan: Core Strategy Consultation Draft and its accompanying SA Report ran from February to April 2014. Comments from those who responded to this consultation and how these have been addressed are included in Appendix B3 accompanying this report.

A further round of consultation was then undertaken, this time on the Publication Core Strategy from 19th August to 30th September 2015. This was accompanied by the SA Report (August 2015). Comments from those who responded to this consultation and how these have been addressed are included in Appendix B4 accompanying this report.

Finally, consultation was undertaken on the SA Report Addendum (April 2016) which was prepared following submission of the Core Strategy. Comments from those who responded to this consultation and how these have been addressed are included in Appendix B5 accompanying this report.

1.7 Geographic and Temporal Scope

The spatial scope for the assessment is largely local (i.e. Oxfordshire); however the assessment takes into account potential regional impacts (such as those on neighbouring authorities) and national impacts, wherever appropriate. For example, the effect on CO_2 emissions is likely to have both local and national implications as any reduction will contribute to national targets, whereas effects on surface water quality may be most relevant to the regional water bodies as well as local water bodies, depending on presence of any such water features and on their existing quality. Effects on transport will also affect neighbouring authorities.

The SEA/SA examines plans across three temporal scales:

- Short term effects: effects expected in the next 1-5 years (i.e. up until 2020);
- Medium term effects: effects expected from 5 years until the end of the plan period (i.e. between 2020 and 2031); and
- Long term effects: effects expected after the life of the plan (i.e. post-2031).

1.8 Habitats Regulations Assessment

Post-Examination Hearings update

This sub-section has been updated to reflect the findings of the screening of the Main Modifications and Additional Modifications

The Habitats Directive requires that planning authorities assess the likely effects of their plans, either alone or in combination with other plans and projects, on sites which have been designated as being

of European importance for the habitat or species they support. In Oxfordshire there are seven sites designated as Special Areas of Conservation (SAC). A Habitats Regulations Assessment screening report (August 2011), prepared by the Council (to support the subsequently withdrawn Core Strategy), identifies the seven sites and the conservation objectives that apply to each and provides an assessment of the likely impacts on them.

The screening report suggested that there could potentially be an impact of mineral extraction near Oxford Meadows SAC and Cothill Fen SAC. Further work was commissioned to provide a hydrogeological assessment of mineral working in the Eynsham / Cassington / Yarnton sharp sand and gravel area and the soft sand area north and south of the A420, west of Abingdon (part of the Corallian Ridge between Oxford and Faringdon). The consultants' report (January 2012) forms an addendum to the screening report. The report concluded that, with certain safeguards, mineral extraction could take place if required in these areas without being likely to have an effect on the SACs.

The County Council considered that this Habitats Regulations Assessment screening report and addendum were adequate to support the Consultation Draft Core Strategy.

Since that stage, the screening report has been reviewed in consultation with Natural England and a revised screening report (August 2015) has been prepared to support the Proposed Submission Document. This August 2015 report has concluded that there would be no significant effects on any of the SACs within, or in close proximity to Oxfordshire, providing that the Core Strategy had incorporated recommended changes, including the amendment of SRAs to avoid overlap with required hydrogeological and hydrological buffer areas adjacent to the Oxford Meadows SAC and Cothill Fen SAC. These changes have been made and it has been concluded that the Core Strategy would not have a likely significant effect on the SACs.

Based on the findings of the screening of the Main Modifications and Additional Modifications (see Section 6.3 and Appendix E) this conclusion remains unchanged.

2 Minerals and Waste Local Plan: Part 1 – Core Strategy

Post-Examination Hearings update

This sub-section has been updated to reflect changes to the Minerals and Waste Planning Visions and Objectives (proposed Main Modifications). Additional text is shown using underline and deleted text is shown using strike through.

2.1 Context

The current Oxfordshire Minerals and Waste Local Plan was adopted by the County Council in July 1996. It contains detailed policies for the supply of minerals, the provision of waste management facilities and for the control of minerals and waste developments. Under the Planning and Compulsory Purchase Act 2004 many of the policies of this Plan have been 'saved' and currently form part of the development plan for Oxfordshire pending their replacement by policies in the new Minerals and Waste Local Plan.

The Minerals and Waste Local Plan – Core Strategy provides the planning strategies and policies for the development that will be needed for the supply of minerals and management of waste in Oxfordshire over the period to 2031. It sets out policies to guide minerals and waste development over the plan period and core policies which address development management issues relevant to both minerals and waste.

2.2 Vision and objectives for minerals and waste

The Minerals and Waste Local Plan's vision and objectives (for minerals and waste) provide the basis for the development of the Core Strategy, its policies, and proposals for minerals supply and waste management in Oxfordshire to 2031. Oxfordshire County Council has developed separate visions and objectives for the minerals and waste strategies.

2.2.1 Minerals Planning Vision and Objectives

The Vision for minerals planning in Oxfordshire in 2031 is as follows.

Minerals Planning Vision

a) There will be a sufficient supply of aggregate materials available to meet the development needs of the county with a world class economy, and make an appropriate contribution to wider needs, provided from the following sources (in order of priority):
   - secondary and recycled aggregate materials (where practicable);
   - locally produced sharp sand and gravel, soft sand, limestone and ironstone; and
   - import of materials such as hard crushed rock that are not available locally.

b) Mineral workings and supply facilities will be located and managed to minimise:
   - the distance that aggregates need to be transported by road from source to market;
   - the use of unsuitable roads, particularly through settlements; and
   - other harmful impacts of mineral extraction, processing and transportation on Oxfordshire's communities and natural and historic environment.

c) Restored mineral workings will enhance the quality of Oxfordshire's natural environment and the quality of life for Oxfordshire residents by:
   - delivering a net gain in biodiversity, and making a significant contribution to establishing a coherent and resilient ecological network, through the creation of priority habitats at a landscape scale;
   - enhancing the green infrastructure within Oxfordshire, providing opportunity for access to the countryside and recreation activity; and
   - helping to reduce the risk of flooding and adding to flood storage capacity.

The Oxfordshire Minerals Planning Vision is supported by the following objectives which underpin the minerals strategy and policies in the MWLP.

	Minerals Planning Objectives
i.	Facilitate the efficient use of Oxfordshire's mineral resources by encouraging the maximum practical recovery of aggregate from secondary and recycled materials for use in place of primary aggregates.
ii.	Make provision for a steady and adequate supply of sharp sand and gravel, soft sand and crushed rock over the plan period to meet the planned economic growth and social needs of Oxfordshire.
iii.	Make an appropriate contribution to meeting wider needs for aggregate minerals, having regard to the strategic importance of Oxfordshire's mineral resources, particularly sand and gravel.
iv.	Enable a continued local supply of limestone and ironstone for building and walling stone for the maintenance, repair and construction of locally distinctive buildings and structures, and of clay to meet local needs for engineering and restoration material.
v.	Provide a framework for investment and development by mineral operators and landowners through a clear and deliverable spatial strategy which is sufficiently flexible to meet future needs and has regard to existing and planned infrastructure.
vi.	Minimise the flood risk associated with minerals development and contribute to climate change mitigation and adaptation, including through restoration schemes which provide habitat creation as a mechanism for addressing climate change adaptation and additional flood storage capacity in the floodplain where possible.
vii.	Minimise the transport impact of mineral development on local communities, the environment and climate change by minimising the distance minerals need to be transported by road and encouraging where possible the movement of aggregates by conveyor, pipeline, rail and on Oxfordshire's waterways.
viii.	Protect Oxfordshire's communities and natural and historic environments (including important landscapes and ecological, geological and archaeological and other heritage assets) from the harmful impacts of mineral development (including traffic).
ix.	Provide benefits to Oxfordshire's natural environment and local communities through the restoration and aftercare of mineral workings at the earliest opportunity, in particular by contributing to nature conservation, enhancing the quality and extent of Conservation Target Areas, contributing to landscape character, improving access to the countryside, safeguarding local amenity, providing opportunities for local recreation and providing benefit to the local economy.
x.	Implement a biodiversity-led restoration strategy that delivers a net gain in biodiversity, and contributes to establishing a coherent and resilient ecological network, through the landscape-scale creation of priority habitat.
xi.	Safeguard important known resources of sharp sand and gravel, soft sand, crushed rock and fuller's earth to ensure that those resources are not needlessly sterilised and remain potentially available for future use and are considered in future development decisions.
xii.	Safeguard important facilities for the production of secondary and recycled aggregate, railhead sites for the bulk movement of aggregate into Oxfordshire by rail and other infrastructure to support the supply of minerals in Oxfordshire.

2.2.2 Waste Planning Vision and Objectives

The Vision for waste planning in Oxfordshire in 2030 is as follows.

Waste Planning Vision

a) There will have been a transformation in the way that waste is managed in Oxfordshire, with:
- Increased re-use, recycling and composting of waste;
- Treatment (so far as is practicable) of all residual waste that cannot be recycled or composted; and
- Only the minimum amount of waste that is necessary being disposed of at landfill sites.

b) The county will remain largely self-sufficient in dealing with the waste it generates. An economically and environmentally efficient network of clean, well-designed recycling, composting and other waste treatment facilities will have been developed to recover material and energy from the county's waste and support its thriving economy.

c) Waste management facilities will be distributed across the county, with larger-scale and specialist facilities being located at or close to Oxford and other large towns, particularly the growth areas, and close to main transport links, and with smaller-scale facilities serving more local areas. Facilities will be located and managed to minimise the use of unsuitable roads, particularly through settlements, and other harmful impacts of waste management development on Oxfordshire's communities and natural and historic environment. This network of waste management facilities will have helped to build more sustainable communities that increasingly take responsibility for their own waste and keep to a minimum the distance waste needs to be moved within the county.

The Oxfordshire Waste Planning Vision is supported by the following objectives which underpin the waste strategy and policies in this plan.

Waste Planning Objectives

i. Make provision for waste management (including residual waste disposal) capacity that allows Oxfordshire to be net self-sufficient in meeting its own needs for municipal solid waste, commercial and industrial waste, and construction, demolition and excavation waste.

ii. Make provision for facilities for the management of agricultural waste, waste water, hazardous waste and radioactive waste produced in Oxfordshire, recognising that specialist facilities for hazardous and radioactive wastes often require provision at a sub-national or national level.

iii. Support initiatives that help reduce the amounts of waste produced and provide for the delivery, as soon as is practicable, of waste management facilities that will drive waste away from landfill and as far up the waste hierarchy as possible; in particular facilities that will enable increased re-use, recycling and composting of waste and the recovery of resources from remaining waste.

iv. Seek to provide for waste to be managed as close as possible to where it arises, and encourage other Waste Planning Authorities ~~areas~~ to become net self-sufficient in meeting their own waste needs, to:
- minimise the distance waste needs to be transported by road;
- reduce adverse impacts of waste transportation on local communities and the environment; and
- enable communities to take responsibility for their own waste.

v. Provide for a broad distribution of waste management facilities to meet local needs across Oxfordshire and make more specific provision for larger facilities that are needed to serve the whole or more substantial parts of the county or a wider area.

vi. Seek to ensure that waste management facilities required in Oxfordshire are provided as an integral part of the infrastructure of the county and where possible are located to enable local employment and local use of energy (heat and power) recovered from waste.

vii. Seek to maintain opportunity for necessary disposal of residual waste from Oxfordshire and other areas in operational landfill sites.

viii. Avoid the unnecessary loss of green field land when making provision for sites for waste management facilities, giving priority to the re-use of previously developed land.

ix. Protect Oxfordshire's communities and natural and historic environments (including important landscapes and ecological, geological and archaeological and other heritage assets) from the harmful impacts of waste management development (including traffic).

x. Secure the satisfactory restoration of temporary waste management sites, including landfills, where the facility is no longer required or acceptable in that location.

3 Environmental and sustainability planning context

Post-Examination Hearings update

The Scoping Report provided as Appendix A to this SA Report Update has been updated which has resulted in some minor updates to this section.

3.1 Introduction

This section summarises the findings from the SA scoping stage. The scoping process seeks to ensure that the Sustainability Appraisal encompasses the key sustainability issues relevant to the county in the context of the development plan system. This section provides the environmental and sustainability context by:

- Examining the relationship of the Core Strategy with other policies, plans and programmes, to identify all relevant environmental protection objectives and to identify potential conflicts to be addressed within the plan-making process; and
- Assembling baseline data on the current and future state of the county for the environment and sustainability topics which may be affected by the Core Strategy.

In August 2005, the first version of the Scoping Report was consulted upon. This was then subsequently updated in 2006. In April/May 2009, a revised version of the Scoping Report was consulted upon. The responses received, along with actions taken in response were reported in Appendix A of the Sustainability Appraisal Report on the Pre Submission Core Strategy (March 2012).

This Scoping Report was subsequently revised again in May 2011. In December 2013, the Scoping Report was again revised and re-consulted. This was further updated (March – August 2015) following the comments received from consultees and to integrate new/updated baseline information and again in December 2016 to accompany the sustainability appraisal for the proposed Main Modifications. A copy of the latest version of the Scoping Report is included in Appendix A of this SA Report Update. The list of those who responded to the consultation along with a summary of the comments received and how they have been addressed are included in Appendix B.

3.2 Review of policies, plans and programmes

The SEA process requires authorities to review the requirements of policies, plans and programmes (PPPs) relevant to the content of the Core Strategy to outline:

- The relationship of the Core Strategy with other relevant plans and programmes; and
- The environmental protection objectives- established at international, community or Member State level- relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.

To fulfil this requirement, a review of the relevant plans, policies and programmes (henceforth referred as PPP review) has been carried out to identify environmental objectives which may provide constraints or synergies with the plan being formulated. The PPP review has selectively considered guidance at international, national regional, county and local level. It has not attempted to provide a detailed review but rather has focussed on strategic environmental, social or economic policies and objectives relevant to the appraisal of the Core Strategy and particular specific environmental protection objectives established at international and national levels. This satisfies the SEA Directive which requires that reference must be made to environmental objectives.

The most recent PPP review can be found in the Scoping Report. This was updated as part of the SA process in February 2014, in March-August 2015 and again in December 2016 and is included as Appendix A of this SA Report. A summary of the PPP review is presented below.

3.2.1 Summary of Review of other Plans and Programmes

Together, plans can be constraints (i.e. set formal limitations, policy contexts, requirements) or can be sources of useful background information as part of evidence gathering. These act together in a hierarchy where a sequence of precedence is established in a nesting, or tiring of plans. A review of other relevant policy documents is required to establish environmental, economic and social objectives that they contain, and it allows opportunities and synergies to be identified, as well as potential conflicts between aims, objectives or detailed policies. This review also highlighted sustainability drivers relevant to the Part 1 – Core Strategy.

The Core Strategy has a direct or indirect relationship with a number of national, regional and local policies, plans and programmes and is likely to support or interact with these policies.

A full list of plans and programmes which have been considered is included in Appendix 1 of the Scoping Report. Many of these plans exist in a hierarchy; from international and European plans, national policies and guidance, through to local policies and plans. This review has sought to avoid duplication by only reviewing the most up to date or relevant plan and to distil the environmental objectives that are most relevant to the Core Strategy. The analysis of the plans is provided in Appendix 2 of the Scoping Report.

The key messages from PPP review are as follows:

- The need to ensure that average distances travelled and traffic congestion are not exacerbated by minerals and waste HGVs, and that these vehicles do not worsen air quality in identified AQMAs, or reduce quality of life for local residents.
- Avoid damage to, and where possible proactively contribute towards the protection and enhancement of international, national and locally designated conservation sites, including SACs, SSSIs, NNRs, Local Wildlife Sites as well as BAP Priority Species and Habitats and nationally and locally important geological features.
- The need to proactively plan for post mineral restoration and for after use of temporary waste sites, to protect, maintain, enhance or restore biodiversity.
- The need to protect the functional floodplain and to take into account the hydrological implications of proposed mineral and waste developments, including assessing flood risk, effects of abstraction or de-watering, potential pollution, groundwater changes before identifying sites for minerals and waste development.
- The need to protect and conserve all aspects of the historic environment and particularly internationally and nationally important historic features, including archaeology.
- The need to ensure a steady supply of mineral materials for local markets, to meet the demand generated by planned and existing development identified in each of the District and City Councils' plans, and to contribute to markets identified outside the county.
- The need to maintain a land bank of permitted reserves for aggregate minerals in line with national policy.
- Waste management policies should support sustainable waste management measures to encourage a reduction in the amount of waste arisings going to landfill in Oxfordshire.

- Soils should be used in a sustainable manner and the Core Strategy should seek to protect the best and most versatile agricultural land.
- The need to maximise the use of secondary and recycled aggregates to reduce the amount of land won aggregates that need to be extracted.
- Restoration of mineral workings should not increase the risk of bird strike.
- The need to provide waste management facilities to allow the county to be net self-sufficient in the treatment and/or disposal of its waste arisings and to contribute towards meeting the need for facilities to manage residual waste from other areas outside the county over the plan period.
- Minerals and waste policies should enable minerals extraction and secure the recovery of waste without endangering human health or residential amenity in local communities.

3.3 Baseline data

A key step in the SA process is establishing the current state of the environment and its likely evolution in the future without implementation of any plan. This process assists in the identification of sustainability and environmental issues/opportunities in the County. It is also important to consider the implications of the Core Strategy in its wider context. Baseline data is required to establish the present state of the County and its surrounding area and will be used subsequently for comparative purposes when monitoring and evaluating the Part 1 – Core Strategy.

A practical approach is generally taken to data collection bearing in mind data availability and trend analysis, following which the actual data and gaps in information to consider in the future are reported at the scoping stage. This reporting also takes into account uncertainties in the data.

Baseline data collection is a continuous process that informs SA production. The Scoping Report produced in April 2009, has been updated in May 2011, December 2013, March - August 2015 and December 2016 based on new information having become available and consultation comments received. The most recent version is included as Appendix A to this SA Report Update.

The Scoping Report issued for consultation in December 2013, and subsequently updated following consultation comments, reported baseline information under environmental, social and economic themes. The data was organised under the following headings:

- Population;
- Human Health;
- Biodiversity and Geodiversity;
- Built and Historic Environment;
- Landscape;
- Water Quality and Resources;
- Climate Change;
- Air Quality;
- Transport; Minerals;
- Waste;
- Land Use; Soils and Resources; and
- Economy.

The baseline data provides an evidence base for identifying sustainability issues in Oxfordshire, as well as a mechanism for identifying alternative ways of dealing with them. The information helped the development of the SA Framework, and will provide a basis for predicting and monitoring the effects of the Core Strategy. In order to assess how the Core Strategy will contribute to sustainable development, it is essential to understand the present economic, environmental and social baseline of the County, and to predict how they may progress without implementation of the Core Strategy.

Prediction of future trends can be highly uncertain but key trends identified from the available baseline data, and therefore potential sustainability issues were identified and discussed in the Scoping Report. Key issues and opportunities are discussed in Section 4 of this report.

In addition the assessments undertaken in relation to the Core Strategy policies identify the environmental characteristics of the areas likely to be significantly affected by that particular policy (see Appendix F).

3.4 Evolution of the baseline without the plan

The SEA regulations require that information is provided on "...the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan".

It is recognised that the future baseline or the 'business as usual' scenario is difficult to describe, as trend data is often not available. However where possible the trends in the future baseline have been described in the baseline review and this is included in Section 3 of the Scoping Report (see Appendix A).

In forecasting the 'business as usual' scenario it is necessary to determine what this means and what assumptions the scenario has been based on. Within this SEA/SA the business as usual scenario has been taken to mean a continuation of the current Minerals and Waste Plan.

4 Environmental and sustainability issues and SA framework

Post-Examination Hearings update

The Scoping Report provided as Appendix A to this SA Report Update has been updated which has resulted in some minor updates to the Issues and Opportunities provided in this section.

4.1 Identifying environmental and sustainability issues

The review of plans and programmes affecting the County, and the collation of the baseline data informed the identification of a series of environmental problems or issues that could be addressed by, or affect the strategies and measures developed in the Core Strategy. Such issues, problems and opportunities have been identified through:

- Review of relevant policies and plans;
- Review of the baseline data;
- Officer knowledge of the County; and
- Responses to the various Scoping Report and SA Report consultations.

The sustainability issues were identified during the scoping in 2009, and have since been revised in light of updated baseline data (in 2011, 2013, 2015 and 2017) and taking account of comments received during the consultation on the Consultation Draft Core Strategy in spring 2014 and the consultation on the Publications SA Report (August 2015). Table 4-1 presents the key sustainability issues and opportunities for Oxfordshire.

Table 4-1: Key sustainability issues and opportunities in Oxfordshire

Key sustainability issues and opportunities in Oxfordshire
Population growth will lead to increased waste production and demand for waste management facilities and for aggregates for construction, across the whole county.
Economic growth in Oxfordshire should be encouraged and minerals and waste development could support this through the provision of opportunities for unskilled labour.
Tourism represents an important part of Oxfordshire's economy. Minerals and waste development could detract from initiatives to encourage people to visit the whole county, not just Oxford. However, post mineral restoration could create opportunities for rural development and recreational facilities.
Climate change poses a threat to parts of the county through flooding. Minerals and waste development could meet this challenge not only by managing the positive and negative aspects of development in the floodplain, but also by encouraging working practices that minimise greenhouse gas emissions.
Increased traffic generation on both motorways and major roads in the county leads to congestion and contributes towards a reduction in air quality. Minerals and waste development should balance reducing air pollution by employing the 'proximity principle' with ensuring that minerals and waste transport minimises environmental impacts by using suitable roads.
Nine Air Quality Management Areas have been identified in Oxfordshire, where levels of NO^2 from traffic exceed recommended government levels. Minerals and waste developments need to manage their transport routes in order to reduce the negative impact on air quality, and to avoid exacerbating pollution levels in existing AQMAs.
Oxfordshire has low rainfall levels and the Thames Water area is one of the most water stressed in the country. Population growth will increase demand for water. The review of abstraction licences by the Environment Agency may result in smaller numbers of licences being permitted. Thames Water has proposed that it build a new reservoir in Oxfordshire to meet rising demand; this may result in increased demand for aggregate for a temporary period.
Minerals and waste development could negatively impact on the biodiversity value of certain areas. Restoration of minerals sites may be constrained by the designation of airfield safeguarding zones across much of Oxfordshire, which reduce the risk of bird strike to aircraft. It may also be constrained by a lack of available inert fill to restore sites to uses such as reed bed or wet woodland.
Mineral and waste development offers opportunities to improve access to rural areas, create recreational facilities, and contribute towards habitat creation in the county and biodiversity gains.
Oxfordshire includes parts of three Areas of Outstanding Natural Beauty which will need to be protected from adverse effects of minerals and waste development. This provides a constraint as to where new and extended operations can be located.
Oxfordshire is a county which has a rich historic environment. Minerals and waste development could result in the loss or destruction of some of the heritage assets of the county such as Scheduled Ancient Monuments and other significant archaeological assets**.**
Oxfordshire has plentiful reserves of sand and gravel, having approximately one third of the unconstrained gravel resource in the South East region. Identifying sites for mineral extraction should take into account the cumulative effect of extensive mineral working on local communities and the transport infrastructure.
The extraction of plentiful reserves of sand and gravel in the county must be balanced against the potential loss of best and most versatile agricultural land which could result from extraction.
Water quality in Oxfordshire's rivers could be improved. Minerals and waste development could contribute to the pollution of water courses and groundwater.
Significant provision needs to be made for secondary aggregate and recycled waste management facilities to continue to increase the amount of secondary aggregate and recycled waste which can be managed in the County.
Landfilling biodegradable waste products is a significant source of methane gas (a more powerful greenhouse gas than carbon dioxide). The amount of waste being disposed in landfill within the county should be minimised in order to reduce the contribution on greenhouse gas emissions.
The River Thames acts a constraint to the transportation of minerals and waste by restricting the lorry routes available suitable to cross the river between northern Oxfordshire (West Oxfordshire District and Cherwell District) and southern Oxfordshire (South Oxfordshire District and Vale of White Horse District).

4.2 Environmental and sustainability objectives

Current guidance on SA of land use and spatial plans advocates the use of objectives in the appraisal process. This section provides an outline of the objectives, criteria and indicators, organised under a SA Framework that was developed during the Scoping Stage and used in subsequent stages to appraise the Core Strategy. It has been updated as a result of consultation comments received, but not to the extent that it would alter any of the previous findings of the SA. This framework includes broad sustainability objectives, criteria explaining the broader objective in a more localised manner and indicators.

The sustainability objectives are quite distinct from the MWLP objectives. They focus on outcomes, and define the basis for achieving social, economic and environmental sustainable development in Oxfordshire. They have been compiled using information from the review of relevant plans and programmes, baseline review and review of key issues.

The purpose of the framework for the SEA/SA, set out in Table 4-3, is to provide a way in which the effects of the plan can be described, analysed, and compared. This process involves considering the content of the Core Strategy against identified SA objectives. The indicators that are selected for monitoring will be finalised later in the SEA/SA process and agreed upon adoption of the Core Strategy. The sustainability objectives used in this SA have been the subject of consultation with other specialist officers within the Council, Council Members through the Minerals and Waste Cabinet Advisory Group (and its predecessor Working Group); and with the statutory consultees, Natural England, Historic England[3] and the Environment Agency.

Following the consultation of the Draft Core Strategy in February 2014, it was decided that SA Objective 2[4] should be split into two separate objectives to enable better assessment of the different aspects of that objective. As seen in Table 4-3, there are now SA Objective 2a which relates to landscape issues and SA Objective 2b which relates specifically to cultural heritage. These two objectives are independent of one another and despite having a 'lower level' of numbering; they carry the same weight as all the other objectives. The numbering of 2a and 2b was used simply to avoid the potential confusion that could occur, for example when looking back at previous drafts in the SEA/SA process, if all the subsequent objectives had to be renumbered to enable the objective on heritage to be labelled as SA objective 3.

Table 4-2 shows how the requirements of the SEA Directive to consider a range of topics are met through the inclusion of the SA objectives.

[3] Formerly English Heritage

[4] 'Protect and enhance landscape character, local distinctiveness, conserve and enhance the historic environment, heritage assets and their settings'

Table 4-2: The Relevance of the SA Objectives to the SEA Directive Topics

SEA Directive Topic	SA Objectives
Biodiversity, flora and fauna	1
Population	7,8
Human health	8
Soil	9
Water	3,6
Air	4,5,7
Climatic factors	5,6,7
Material assets	10,11,12
Cultural heritage Inc. archaeological & architectural	2b
Landscape	2a

To complement the strategic objectives, Table 4-3 lists the sub-objectives which offer more detailed appraisal criteria, which are more specific to the preparation of the Core Strategy. The final column consists of indicators by which to assess the effects of the Core Strategy. Assessment of the Core Strategy needs to be undertaken iteratively during its preparation and over the whole Plan period.

Table 4-3: SA Framework

SA Objective		Appraisal Criteria/Sub-objectives	Possible Indicators
1	To protect, maintain, and enhance Oxfordshire's biodiversity and geological diversity including natural habitats, flora and fauna and protected species	Will the Plan protect, maintain and enhance UK BAP Priority Habitats? Will the Plan conserve and enhance internationally, nationally and regionally important sites of nature conservation importance? Will the Plan protect, maintain and enhance UK BAP Priority Species? Will the Plan contribute to the aims of the Conservation Target Areas? Will the Plan protect and conserve geological SSSIs and Local Geology Sites?	Number/percentage of permitted applications for minerals and waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Habitats Plans for the creation of calcareous grasslands, lowland acid grassland and reedbeds. Number/percentage of planning applications which have an impact on designated sites or BAP habitats. Number/percentage of permitted applications which result in restoration of favourable recovering condition or buffering of designated areas through appropriate habitat creation. Number/percentage of permitted applications for minerals and waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Species Plans. Contribution of the Local Plan policies to Conservation Target Areas for restoration of minerals and waste management sites. Number/percentage of permitted applications which include conditions for the protection or enhancement of Local Geology Sites or geological SSSIs.
2a	To protect and enhance landscape character and local distinctiveness	Will the Plan conserve and enhance Oxfordshire's AONBs & their settings and take into account guidelines associated with specific landscape types? Will the Plan respect, maintain and strengthen local character and distinctiveness?	Minerals and waste development where the anticipated residual landscape impact is neutral or positive. Number/percentage of permitted applications for minerals and waste development which include conditions for the protection or restoration of statutory or non-statutory landscape designations.

SA Objective		Appraisal Criteria/Sub-objectives	Possible Indicators
2b	To conserve and enhance the historic environment, heritage assets and their settings	Will the Plan protect, conserve and/or enhance heritage assets and the historic/prehistoric environment of Oxfordshire? Will the Plan contribute to the better management of heritage assets? Will the Plan improve the quality of the historic environment? 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?	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 characterisation type(s) which have been altered and their character eroded.
3	To maintain and improve ground and surface water quality	Will the Plan affect groundwater quality? Will the Plan affect surface water quality?	Number of permitted applications affecting source protection zones 2 and 3. Number of permitted applications which assess the risk of contamination of groundwater. Number of sites within 50m of a watercourse. Number of permitted applications requiring abstraction licences.
4	To improve and maintain air quality to levels which do not damage natural systems	Will the Plan lead to increased traffic congestion in built up areas? Will Plan lead to increased dust and/or odours?	Number of permitted applications with routeing agreements which avoid AQMAs. Survey of trip generation to civic amenity sites. Number of complaints relating to dust/odours.
5	To reduce greenhouse gas emissions to reduce the cause of climate change	Will the Plan lead to a decrease in production of greenhouse gases such as CO_2 and methane?	Proportion of waste and aggregates transported by rail or water. Quantity of biodegradable wastes diverted from landfill.
6	To reduce the risk of flooding	Will the proposal seek to maintain or reduce flood risk?	Number of permitted sites for minerals and waste development within the flood plain (flood zone 3a) Number of sites that are permitted within flood risk zone as identified by the NPPF and Technical Guidance to NPPF. Number of proposals approved against the recommendation of EA advice. Number of mineral restoration schemes identified for flood attenuation.

SA Objective		Appraisal Criteria/Sub-objectives	Possible Indicators
7	To minimise the impact of transportation of aggregates and waste products on the local and strategic road network	Will the Plan reduce distances travelled by road? Are sites in the Plan well located in relation to surrounding settlements for waste, or markets for minerals? Will the waste facilities or mineral operation serve local needs? Does the Plan facilitate HGV routeing agreements and developer contributions for infrastructure improvements?	Distances travelled by road from new applications to settlements (waste) or markets (minerals). Number of sites with rail/water access. Number of sites with suitable access to appropriate roads. Average distances travelled to waste recycling sites.
8	To minimise negative impacts of waste management facilities and mineral extraction on people and local communities	Will the Plan have impacts which could have a harmful effect on human health? Will the Plan result in loss of amenity through visual impact, noise, dust or vibration for local communities? Will the Plan provide opportunities for enhancement of local amenity and access to the countryside?	Number of permitted applications for mineral or waste development within 250m of sensitive receptors (settlements). Number of sites for mineral or waste development within 250m of sensitive receptors (settlements). Number of noise complaints relating to minerals and waste processing and transportation. Number of permitted applications with restoration conditions which enhance local amenity and /or improve access to the countryside.
9	To protect, improve and where necessary restore land and soil quality	Will the Plan affect high grade agricultural land? Will the Plan lead to soil pollution or contamination?	Area of high grade agricultural land lost to minerals and waste development. Incidences of land contamination related to minerals and waste development.
10	To contribute towards moving up the waste hierarchy in Oxfordshire	Will the Plan increase the amount of waste re-used, recycled or recovered?	Amounts of waste recycled and recovered.
11	To enable Oxfordshire to be self-sufficient in its waste management and to provide for its local need for aggregates as set out in the LAA	Will the Plan reduce the need for waste to be transported outside Oxfordshire for treatment or disposal? Will the Plan reduce the need for Oxfordshire to import aggregates?	Number of permitted applications for waste management to meet targets to achieve net waste self-sufficiency. Number of permitted applications which contribute to meeting minerals supply requirement.
12	To support Oxfordshire's economic growth and reduce disparities across the county	Will the Plan encourage the provision of more locally based skills and facilities? Will the Plan generate new jobs for the county? Will the Plan support and encourage the growth of small and medium size business?	Number of direct jobs created in the waste/mineral sector per year. Number of new mineral and waste permissions.

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4.3 Compatibility of the SA objectives

A compatibility assessment of the SA objectives was undertaken at the scoping stage in order to identify whether there were any incompatibilities or tensions between certain objectives. Where potential incompatibilities have been identified these have been taken into account when undertaking the assessment process and appropriate mitigation measures or alternative approaches in the Core Strategy considered. Details of the compatibility analysis can be found in Table 4-4 below.

Symbol	Compatibility
+	Objectives compatible
0	Objectives not related
-	Objectives incompatible
?	Mitigation measures may need to be taken to satisfactorily achieve both objectives

Table 4-4: Compatibility of SA Objectives

	Biodiversity and geodiversity	Landscape	Historic environment	Water quality	Air quality	Greenhouse gas emissions	Flooding	Transport	Population and health	Land and soil quality	Waste hierarchy	Self-sufficiency	Economic growth
Biodiversity and geodiversity		+	+	+	+	+	+	0	0	+	0	0	?
Landscape	+		+	+	0	0	0	0	0	0	0	0	?
Historic environment	+	+		+	0	0	0	0	0	0	0	0	?
Water quality	+	0	+		+	0	+	+	+	+	0	0	?
Air quality	+	0	0	+		+	+	+	+	+	+	0	?
Greenhouse gas emissions	+	0	0	0	+		+	+	+	+	+	+	?
Flooding	0	0	0	+	0	+		0	+	+	+	0	0
Transport	0	+	0	0	+	+	0		+	0	+	+	?
Population and health	0	+	0	+	+	0	0	+		0	+	+	?
Land and soil quality	+	0	0	0	0	0	+	+	0		0	0	0
Waste hierarchy	0	0	0	0	+	+	+	+	+	0		+	+
Self-sufficiency	0	0	0	0	0	+	0	+	+	0	+		+
Economic growth	?	?	?	?	?	-	?	?	?	?	+	+	

4.4 Inter-relationships between SA objectives

During the assessment the SA objectives should not be considered in isolation as many inter-relationships exist that need to be taken into account. Some of these relationships are clear cut and easy to understand, for example reduced greenhouse gas (GHG) emissions and improved air quality which would both result from transport modal shift to more sustainable transport modes. Others however can be less obvious, but are equally important and need to be understood when assessing the Core Strategy. For example through reducing the risk of properties flooding there are inter-relationships between climate change adaptation measures and improvement in human health and well-being.

Close inter-relationships exist between environmental topics such as air quality, water quality, soil and biodiversity, with improvements or degradation to one often resulting in a similar effect on the other related media/topics. For example increased air pollution can have adverse effects on soil, water quality, and biodiversity through acidification. These effects can then cause issues relating to landscape degradation.

4.5 Compatibility of the Minerals Planning Vision and Objectives with the SA Objectives

A compatibility assessment (Table 4-5) has been undertaken of the proposed Minerals Planning Strategy Vision and Objectives (see Section 2.2.1) with the SA Objectives. The following table provides an explanation of the symbols used in the compatibility assessment.

Symbol	Compatibility
+	Objectives compatible
0	Objectives not related
-	Objectives incompatible
?	The objective relationship is unknown or is dependent on implementation

Table 4-5 Compatibility assessment between SA objectives and the Minerals Planning vision and objectives

SA Objectives (abridged) Minerals Planning Strategy vision and objectives	SA1 Biodiversity and geodiversity	SA2a Landscape	SA2b Historic environment	SA3 Water quality	SA4 Air quality	SA5 Greenhouse gas emissions	SA6 Flooding	SA7 Transport	SA8 Population and health	SA9 Land and soil quality	SA10 Waste hierarchy	SA11 Self-sufficiency	SA12 Economic growth
Vision	+	+	+	+	+	+	+	+	+	+	+	+	+
Objective i	0	0	0	0	0	+	0	?	?	+	+	+	+
Objective ii	?	?	?	?	?	?	?	?	?	?	0	+	+
Objective iii	?	?	?	?	?	?	?	?	?	?	0	+	+
Objective iv	?	+	+	?	?	+	0	+	?	?	0	+	+
Objective v	0	0	0	0	0	0	0	+	0	0	0	+	+
Objective vi	+	+	+	+	0	+	+	+	+	+	0	?	+
Objective vii	?	?	?	?	+	+	?	+	+	?	0	?	?
Objective viii	+	+	+	+	+	+	+	+	+	+	0	0	+
Objective ix	+	+	+	+	+	+	+	0	+	+	0	0	+
Objective x	+	+	?	?	?	+	?	0	0	?	0	+	+
Objective xi	?	?	?	?	+	+	?	+	+	?	+	+	+
Objective xii	?	?	?	?	?	?	?	+	?	?	0	+	+

Overall, the proposed vision and objectives were found to be compatible with the SA objectives. The Minerals Planning Vision was found to be compatible with all of the SA objectives. For example, restored minerals workings that will enhance the quality of Oxfordshire's natural environment and the quality of life for Oxfordshire's residents is compatible with SA objectives SA1 (biodiversity and geodiversity), SA2a (landscape), SA2b (historic environment), and SA8 (population and health). Locating and managing minerals workings to minimise the distance that aggregates need to travel and other harmful impacts on the environment is compatible with SA objectives SA3 (water quality), SA4 (air quality), SA5 (greenhouse gas emissions), SA7 (transport), and SA9 (land and soil quality). Ensuring that there will be sufficient supply of aggregate materials is compatible with SA objectives SA11 (self-sufficiency) and SA12 (economic growth).

The minerals planning objectives seek to manage Oxfordshire's mineral planning needs in a way that protects the valued natural environment (Objectives vi, vii and viii), contributes to economic growth (Objectives i, ii, iii, iv, and v), as well as ensuring communities are provided with adequate facilities to meet anticipated needs (Objectives x and xi). This has resulted in compatibilities with many of the SA objectives, although some uncertain relationships have been identified.

The relationship between Objectives ii and iii, which allow for the provision of aggregates, and the environmental and social SA objectives, is uncertain, as much of the effect will be dependent on the location of the workings and the mitigation measures put in place to reduce any adverse effects. The same also goes for Objective iv which provides for non-aggregate minerals, although for this plan objective more compatibilities have been identified, as the objective should for example allow for the provision of limestone and ironstone for maintaining and restoring locally distinctive buildings and structures, which is compatible with SA2a (landscape) and SA2b (historic environment).

Uncertain compatibility has been noted for Objectives vii and xi with SA objectives SA1 (biodiversity and geodiversity), SA2a (landscape), SA2b (historic environment), SA3 (water quality), SA6 (flooding) and SA9 (land and soil quality) as any new transport infrastructure could adversely affect these objectives, although the effects will be dependent on location.

4.6 Compatibility of the Waste Planning Vision and Objectives with the SA Objectives

A compatibility assessment (Table 4-6) has also been undertaken of the proposed Waste Planning Strategy Vision and Objectives (see Section 2.2.2) with the SA Objectives. The following table provides an explanation of the symbols used in the compatibility assessment.

Table 4-6: Compatibility assessment between SA objectives and the Waste Planning vision and objectives

SA Objectives (abridged) / Waste Planning Strategy vision and objectives	SA1 Biodiversity and geodiversity	SA2 Landscape	SA2b Historic environment	SA3 Water quality	SA4 Air quality	SA5 Greenhouse gas emissions	SA6 Flooding	SA7 Transport	SA8 Population and health	SA9 Land and soil quality	SA10 Waste hierarchy	SA11 Self-sufficiency	SA12 Economic growth
Vision	?	?	?	?	+	+	?	+	?	?	+	+	+
Objective i	?	?	?	?	?	+	?	+	?	?	+	+	+
Objective ii	?	?	?	?	?	?	?	?	?	?	0	+	0
Objective iii	?	+	?	+	?	+	?	?	?	?	+	+	+
Objective iv	+	+	+	+	+	+	+	+	+	+	0	+	+
Objective v	?	?	?	?	?	+	?	?	?	?	0	+	+
Objective vi	0	0	0	0	0	+	0	?	+	0	0	+	+
Objective vii	?	?	?	0	?	?	?	?	?	?	-	+	+
Objective viii	+	+	?	?	?	?	?	?	?	+	0	0	+
Objective ix	+	+	+	+	+	?	+	?	+	+	0	0	0
Objective x	+	+	+	+	+	+	+	+	+	+	0	0	+

Overall, the proposed vision and objectives were found to be either compatible or having an uncertain relationship with the SA objectives. One incompatibility was found between objective vii

making provision for landfill and SA 10 (waste hierarchy), although it is recognised that it is not possible to recycle and treat all waste and the Core Strategy must therefore make provision for some disposal. Other objectives seek to limit waste to landfill.

The Waste Planning Vision was found to be compatible with objectives SA4 (air quality), and SA5 (greenhouse gas emissions) due the distribution of waste management facilities close to sources of waste arisings. The vision is also compatible with objectives SA10 (waste hierarchy), SA11 (self-sufficiency) and SA12 (economic growth). Uncertain relationships have been identified with the other environmental objectives as the need for waste management facilities could have an effect on these objectives depending on the location of the facilities. Similar uncertain relationships have also been identified with Objectives i, ii, iii, v, vi and vii which support the provision of waste management facilities.

The relationship between Objectives ix and x and the SA objectives have been identified as compatible or neutral. Avoiding loss of greenfield land and protecting Oxfordshire's communities and natural/historic environments is compatible with the environmental and social objectives.

5 Development of the Local Plan: Part 1 - Core Strategy

Post-Examination Hearings update

This section provides a summary of how alternatives have been considered during the development of the Core Strategy, with cross-reference to Appendix C that provides additional detail. The section then provides details of the additional alternatives that have been considered and assessed following the Examination Hearings.

5.1 Introduction

In order to be considered 'sound' a Local Plan needs to be positively prepared, justified, effective and consistent with national policy. The proper consideration of options during the plan making process is key to developing a sound plan; the NPPF emphasises that Local Plans must be the most appropriate strategy when considered against the reasonable alternatives.

During the development of the Core Strategy, a wide range of options has been considered for delivering the plan objectives across the full range of planning issues within the scope of the Core Strategy.

The first stage of this process was the consultation on the Issues and Options in June 2006, with several subsequent rounds of plan preparation and consultation having followed. All of the options considered throughout the development of the Core Strategy have been subject to sustainability appraisal. See Table 1-2 for an outline of the various reports that have been produced to date.

The following sub-sections provide a summary of how alternatives have been considered during the development of the Core Strategy. A greater level of detail for each policy, prior to the submission of the Core Strategy in 2015, is provided in Appendix C to this report. Appendix D to this report provides information on the consideration of alternatives post-Examination Hearings, with a summary of the findings of this additional work being provided in Section 5.3.

5.2 Consideration of alternatives prior to Submission of the Core Strategy (2015)

There has been extensive and detailed consideration of options throughout the development of the Core Strategy. The SEA/SA has provided continual input into this process, through helping to develop and refine options and emerging strategies and policies and by reporting the findings of the assessments undertaken at each stage of the plan making process. These assessments have provided the decision makers with information on the likely sustainability implications of pursuing one option over another and have therefore been an important part of both the evidence base and the decision making process itself, when deciding the preferred options for including in the Core Strategy.

It should be noted, however, that the reasons for taking forward some options and rejecting others are not restricted to the findings of the SEA/SA but also cover wider planning issues such as national planning policy, deliverability, views of the local community and stakeholders, and infrastructure availability/constraints.

The options that were selected for inclusion in the Submission Core Strategy were those that were considered to be the most appropriate, based on studies and assessments, to deliver the objectives of the Core Strategy, whilst the options that were not taken forward were those that did not perform as well against the criteria in the studies and assessments that were undertaken to inform the development of the Core Strategy.

The policies that consider the quantity and location of activity have been subject to the most extensive consideration of alternatives throughout the process of developing the Core Strategy, as they are the policies that 'drive' the strategy and through which there is the greatest potential for significant effects to result, both positive and negative. For some of the supporting policies within the Core Strategy no reasonable alternatives were identified as the policies either follow national policy and guidance, and hence have no alternatives, or because of the procedural nature of the policy.

In relation to the Core Policies, all the policies in their submitted form were considered to be in alignment with the NPPF. No options for any of the policies were considered during the development of the Core Strategy as these 'development control' policies cover criteria and details relating to each topic, rather than setting 'levels of activity' or 'locations for any activity' the implementation of which could result in significant effects.

At the plan submission stage, the Council considered that the reasons for selecting the preferred options that were included in the Publication Minerals and Waste Core Strategy remained valid, as did the reasons for rejecting other reasonable alternatives during the previous stages of the plan making process.

Details of the alternatives that were considered in relation to each of the policies in the Core Strategy up to the Submission stage, including reasons for selecting some alternatives and rejecting others, are provided in Appendix C to this SA Report Update.

5.3 Post-Examination Hearings consideration of alternatives

The Core Strategy was submitted to the Secretary of State for independent examination in December 2015 with the Examination Hearings taking place in September 2016. Following the Hearings, the Inspector provided an Interim Report (October 2016) in which he indicated the requirement for the Council to consider reasonable alternatives with regards to certain policies.

In November/December 2016, consultants Land Use Consultants (LUC) undertook a further SEA/SA assessment of the reasonable alternatives being considered during the post-Examination Hearings stage. The following sections provide a summary of the findings of these assessments, while the comprehensive alternatives assessment documents for both the Minerals and Waste Strategies can be found in Appendix D to this report. This work has informed the Council's selection and rejection of options.

5.4 Mineral strategy alternatives

This section provides information on the alternatives that have been considered during the post-Examination Hearings process to undertake the further SEA/SA required and finalise the Main Modifications that Oxfordshire County Council will be proposing to publish for consultation.

Table 5-1 provides information on the alternatives that have been considered for the policies that make up the Minerals Strategy element of the Core Strategy. It provides information on the reasonable alternatives considered, where they exist, for each policy; information on potential alternatives that were not considered to be reasonable, with explanations as to why this was considered to be the case; a summary of the findings of the assessments undertaken by LUC on the alternatives (see Appendix D); and reasons for selecting the alternative that has been taken forward for inclusion in the Core Strategy incorporating Main Modifications.

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Table 5-1: Minerals Strategy Alternatives

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
Policy M1: Recycled and Secondary Aggregate	The Examination Inspector concluded that the figure of 'at least' or 'a minimum of' 926,000 tonnes per annum should be incorporated in the revision of policy M1. The Council is therefore proposing to include the following text as part of the Main Modification for policy M1: "*Provision will be made for facilities to enable the production and/or supply of a minimum of 0.926 million tonnes of recycled and secondary aggregates per annum*". At this stage in the development of the Core Strategy there are not considered to be any reasonable alternatives to consider in relation to the figure to be included in the policy (see column to the right for details on potential alternatives that are not considered to be reasonable alternatives for new assessment).	N/A	0.67 mtpa – the reasons for rejecting this option in 2011 remain valid (i.e. that it does not have the same level of sustainability benefits when compared to the higher figures). It is therefore not a reasonable alternative that needs to be reconsidered. 0.9 mtpa – the figure of 'at least 0.9 mtpa' was included in the withdrawn 2012 Core Strategy and assessed in the SEA/SA. The figure was based on the figure specified in the South East Plan and is therefore no longer current. In addition it is not sufficiently distinct from the level now being proposed (0.926 mtpa) to warrant consideration as a reasonable alternative. 1.025 mtpa – this figure is the Council's assessment of the current operational capacity for production of recycled and secondary aggregates (Examination document M2/1). It is 10.7% higher than the figure currently being proposed for the Main Modification. However, given that the proposed Main Modification figure of 0.926 mtpa is 'a minimum', which would not preclude 1.025 mtpa being delivered, and given that the Inspector has concluded that a figure of 'at least' or 'a minimum of' 926,000 tonnes per annum should be incorporated in the revision of policy M1, the Council concludes that there is no requirement to consider 1.025 mtpa as a reasonable alternative.

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
			No target figure – the approach taken in the 2014 Draft Core Strategy and the 2015 Submitted Plan was to not include a target figure, but instead to seek to maximise the contribution to aggregate supply from recycled and secondary aggregates. This approach was assessed in the SA/SEA. Given the consensus during the Examination and the subsequent conclusions of the Inspector it has been decided that a figure should be provided in the policy. Therefore having no target is no longer considered to be a reasonable alternative.
			In relation to policy M1, an alternative has also been put forward through representations to rely on increased imports of secondary and recycled aggregates by rail. This is not considered to be a reasonable alternative for policy M1 as the policy allows for and does not preclude the increased import of such material by rail. In addition there is no indication of this material being imported by rail to Oxfordshire at least in the short term and this is a matter outside the control of the Council.
Policy M2: Provision for working aggregate minerals	The LAA 2014 has been prepared in accordance with the NPPF and the provision figures in it are the objectively assessed need. The findings of the LAA have been confirmed in the Inspector's Interim Report as being soundly based and robust. The Inspector has concluded that provision for the plan period should be made in policy M2 based on the LAA figures. There are therefore no reasonable alternatives to consider at this stage in the development of Core Strategy.	N/A	An alternative has been put forward through representations that the provision figures should be based just on the 10 year sales average. This equates to an alternative of not making provision for the wider area as raised in the Inspector's Interim Report (paragraph 39) and the subsequent correspondence. The Interim Report refers to the consideration of alternative levels of provision that was undertaken for the withdrawn 2012 Plan. At the time that the Plan was being prepared, the national planning policy system for aggregate minerals was 'top down', with nationally

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
			produced regional guideline figures being apportioned in regional spatial strategies to set provision figures for individual mineral planning authorities (MPAs). However, in July 2010 the government stated that 'planning authorities can choose to use alternative figures for their planning purposes if they have new or different information and a robust evidence base' (letter dated 6 July 2010 from DCLG Chief Planner on Revocation of Regional Strategies). In the light of this, the Council commissioned consultants to produce a Local Assessment of Aggregate Supply Requirements in January 2011 (Atkins Report) and alternatives drawn from this report were assessed against the South East Plan apportionment for Oxfordshire. With the dismantling of the regional planning system and introduction of the NPPF in 2012, the national planning policy approach to aggregate mineral provision figures is now quite different. The NPPF (paragraph 145) requires MPAs to prepare an annual Local Aggregate Assessment (LAA) 'based on a rolling average of 10 years sales data and other relevant local information'; and to make provision for 'the land-won and other elements of their Local Aggregate Assessment in their mineral plans taking account of the advice of the Aggregate Working Parties and National Aggregate Co-ordinating Group as appropriate'. The LAA is a technical document providing the objectively assessed need for provision for aggregate supply. National policy does not allow for alternatives to the LAA provision figures to be used in mineral plans, except if any contrary advice is given by the Aggregate Working Parties and/or National Aggregate Co-ordinating Group. The Oxfordshire LAA 2014 is based on the 10 years sales

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
			average and other relevant local information, in accordance with the NPPF. The LAA concludes that taking into account the other relevant local information an adjusted 10 year sales average figure should be used (to compensate for the mothballing of quarries and temporary replacement by supply from sources outside Oxfordshire that took place during the 10 year period, and thus reflect Oxfordshire's past proportions of national supply and thereby contribute to the needs of the wider area) and not the 10 year sales average alone. The South East England Aggregate Working Party has supported the LAA. The LAA has been considered as part of the examination of the Core Strategy and the Interim Report concludes that 'the finding of the LAA is soundly based on the best available evidence at the time and is therefore robust'. This confirms that the provision figures in the LAA 2014 are the objectively assessed need figures that should be used in the Core Strategy. As the Interim Report says, how that objectively assessed need can or should be delivered is a matter to be assessed in the consideration of the strategy to deliver the provision requirements that flow from the LAA; but in view of the requirements of the NPPF there is no reasonable alternative to the objectively assessed need figures themselves and therefore there is no reasonable alternative to the amounts of provision to be made in policy M2. Therefore provision based just on the 10 year sales average (or not making provision for the wider area) is not considered to be a reasonable alternative.

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
			An alternative has also been put forward through representations that the requirement for primary aggregate could be met by imported crushed rock and china clay waste transported by rail. This is not considered to be a reasonable alternative because there is no indication of china clay waste becoming available as a supply of aggregate to Oxfordshire and there is a lack of evidence that increased supply of crushed rock from sources outside Oxfordshire and increased capacity for transport and delivery of these materials by rail could become available, at least in the short term.
Policy M3: Principal locations for working aggregate minerals	The following alternatives will be considered for this policy: • The current Submitted Plan approach to exclude the Bampton/Clanfield area from policy M3 • Include the Bampton/Clanfield area in policy M3	*This SA recommends that the Bampton/Clanfield area is not included as an SRA for sharp sand and gravel in the Core Strategy. Whilst the inclusion of this area would lead to a greater choice of sites for minerals workings, it is likely to lead to negative effects associated with an increased weighted average distance to market. This would lead to increased emissions of air pollution and greenhouse gases associated with HGVs driving a longer distance to market (SA Objectives 4 and 5). The greater distance to market will also have negative implications for transport considerations, as this may increase congestion over a wider area and lead to an increased highway maintenance requirement (SA Objective 7). Economic implications of a greater distance to market remain uncertain (SA Objective 12).*	In relation to principal locations for working aggregate minerals, alternatives have been put forward as follows: • Exclude SRA at Caversham to Shiplake; • Delete Western SRA; • Lower Evenlode Valley should be excluded; and • No new working from Kennington to Cholsey: The Strategic Resource Areas have been broadly drawn to encompass the potentially workable mineral deposits within each area. It is therefore not considered to be a reasonable alternative to exclude any of these areas, or any parts of them, from policy M3.
			Exclude Green Belt from SRAs: mineral extraction is a form of development that is not inappropriate in the Green Belt providing it preserves the openness of the Green Belt and does not conflict with the purposes of including land in the Green Belt, which are matters that can only be determined when specific site detailed proposals are available. Excluding the Green Belt from the SRAs is therefore not considered to be a reasonable alternative.

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
		Whilst this may make the Bampton/Clanfield area a less attractive area for investment, there are a number of site nominations for minerals workings in the area. In not including Bampton Clanfield, minerals are more likely to be worked closer to the relevant market areas, therefore minimising negative effects associated with transporting minerals longer distances. *The weighted average area that would need to be worked to provide a million tonnes of mineral resources in all SRAs would be less within Bampton/Clanfield than all other SRAs . As such, it is likely that a smaller area of land would need to be worked in order to yield the same tonnage of sharp sand and gravel, which could help minimise impacts, although this remains uncertain as this depends on the exact location of workings. Nevertheless, this varies within and between SRAs, therefore a degree of uncertainty remains in relation to this.*	Consider having SRAs in AONBs: Government policy is that major minerals developments should only be permitted in Areas of Outstanding Natural Beauty (AONB) in exceptional circumstances. In view of the large extent of potentially workable mineral resources in Oxfordshire outside AONBs, it is not considered to be a reasonable alternative to include AONBs in the SRAs. Exclude Scheduled Monuments from SRAs: the SRAs are broad areas and it would not be appropriate to map them to a level of detail that would exclude scheduled monuments and other similar constraints but rather these constraints should be taken into account in the allocation of sites in accordance with the polices of the plan relating to protection of heritage assets.
	Option selected for inclusion in the Core Strategy incorporating proposed Main Modifications: Based on the findings of the assessment, the approach taken in the submitted Core Strategy to not include the Bampton/Clanfield area as a strategic resource area in policy M3 has been selected as the preferred option and consequently that approach has been retained in the Core Strategy incorporating Main Modifications. **Reasons for selecting the preferred alternative and rejecting the others:** The option to exclude the Bampton/Clanfield area from the strategic resource areas in policy M3 has been selected, and the option to include that area rejected, because based on the findings of the assessment exclusion of the Bampton/Clanfield area is expected to result in a lower overall lorry movement distance from mineral working sites to markets within Oxfordshire and consequently to result in less impacts in terms of greenhouse gas emissions in particular and also in relation to air quality and transport effects.		

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
	Consequently, the approach in the submitted Core Strategy is expected to be the better of the two alternative options in delivering Minerals Planning Objective 3.4vii (minimise transport impacts) of the MWLP. Whilst inclusion of the Bampton/Clanfield area would potentially provide a greater choice of sites for mineral working and would be likely to result in a smaller area of land being needed to be worked in order to yield the required tonnage of sharp sand and gravel, these factors are outweighed by the lower overall lorry movement distance that is expected to result from the exclusion of that area.		
	In relation to the element of Policy M4[5] "… *to achieve a change over the course of the plan period in the balance of production capacity for sharp sand & gravel between the strategic resource areas in western & southern Oxfordshire to more closely reflect the distribution of demand within the county*", the following alternatives were considered. All the options are potentially deliverable and were therefore all considered to be reasonable. • Option 1: 0% southern Oxfordshire, 100% northern Oxfordshire (as proposed in representations); • Option 2: 35% southern Oxfordshire, 65% northern Oxfordshire (current situation); • Option 3: 75% southern Oxfordshire, 25% northern Oxfordshire (split required to achieve an approximate 50:50 split of production capacity to reflect the estimated 50:50 split in future demand between the north and south of the County). The percentage in the south is greater than that in the north as the existing permitted reserves are greater in	*This SA recommends a distribution of 75% of new sharp sand and gravel provision in southern Oxfordshire and 25% in northern Oxfordshire (Option 3). This is the distribution required to achieve an equal distribution of supply between northern and southern Oxfordshire, in line with the distribution of expected demand for aggregates between the northern and southern parts of the county. This option is considered to be the most sustainable as it minimises weighted average distance to market, whilst allowing a greater choice of locations for minerals workings. Option 3 performs best against SA Objectives 4, 5, 7, 11 and 12. In co-ordinating locations of sharp sand and gravel working with aggregates demand, this option is expected to minimise transport distance to market, which is likely to reduce emissions of greenhouse gases and air pollutants and transport effects associated with HGVs. This option may also encourage self-sufficiency and effective economic*	No strategic alternative have been put forward that are not covered by the scope of the four options that will be assessed.

[5] NB: as part of the Proposed Main Modifications this element is now incorporated in Policy M3

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
	the north (including a permission at Gill Mill which will continue right through the plan period and beyond); • Option 4: 100% southern Oxfordshire, 0% northern Oxfordshire (as proposed in representations) The total requirement for the plan period is 18.27 mt. The current permitted reserves available for working during the plan period total 11.85 mt. Taking into account sales in 2014 and 2015 of 1.41 mt leaves a remaining requirement of 5.01 mt. It is for this shortfall that the Core Strategy needs to make provision and therefore the options presented above relate to this figure.	*investment.* *Issues associated with a greater weighted average distance between source and market are described in the 'Inclusion of Bampton/Clanfield' section above. These would be exacerbated by Options 1 and 4 (100% additional provision from northern and 100% additional provision from southern Oxfordshire respectively), as concentrating minerals workings on one half of the County would increase distances to markets in the other half of the County.* *Options 1 and 4 tend to have more negative effects, due to the results of concentrating minerals workings in one half of the county. Sensitive receptors, including archaeological assets and water resources (SA Objectives 2b and 3), are more likely to be affected as there would be less choice for alternative sites where impacts are likely to arise and less opportunity to dilute negative effects over a larger area. Likewise, effects on local communities are more likely to be concentrated in certain areas, particularly in the case of Option 1, where there is only one SRA for sharp sand and gravel (i.e. SRA6) (SA Objective 8). Option 1 performs slightly better against SA Objectives 1, 2a, 2b, 3 and 9, as it would concentrate new sand and gravel extraction in northern Oxfordshire, where the weighted average*	

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
		area that would need to be worked to provide a million tonnes of mineral resources is less[6]*. As such, this is likely to lessen any impacts associated with land take, including the likelihood of workings being in proximity to sensitive features, although this depends on the exact location of mineral workings.*	
	Option selected for inclusion in the Core Strategy incorporating proposed Main Modifications: Based on the findings of the assessment Option 3: has been incorporated into policy M3 of the Core Strategy incorporating proposed Main Modifications. This option reflects the strategy approach in policy M4 of the submitted Core Strategy but is more specific in terms of the proportional split of new provision required in the two parts of the county in order to achieve an approximate 50:50 split of production capacity. **Reasons for selecting the preferred alternative and rejecting the others:** Option 3 has been selected because, based on the findings of the assessment, of the four alternatives assessed this option is expected to result in the lowest overall lorry movement distance from mineral working sites to markets and consequently to result in the lowest impacts in terms of air quality, greenhouse gas emissions, and transport effects. Consequently Option 3 is expected to be the best of the four alternatives in terms of delivering Minerals Planning Objective 3.4vii (minimise transport impacts) of the MWLP. In addition, based on the findings of the assessment, Option 3 is likely to result in positive effects in terms of self-sufficiency compared with negative or uncertain effects for the other three options; and is expected to result in more positive effects in terms of economic factors than the other three options. Consequently Option 3 is the best of the four alternatives in terms of delivering Minerals Planning Objective 3.4ii (steady and adequate supply of minerals) of the MWLP. For these same reasons, Options 1, 2 and 4 have been rejected.		
Policy M4: Sites for working aggregate minerals	No alternatives to be considered.	N/A	None
Policy M5: Working of	This is a procedural policy. No alternatives to be considered.	N/A	None

[6] OCC (2016) Weighted averages for distance to markets and weighted average of area per mt resource [Spreadsheet]

Minerals Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives.	Alternatives that are not considered to be reasonable
Aggregate Minerals			
Policy M6: Aggregate rail depots	No alternatives to be considered.	N/A	None
Policy M7: Non-aggregate mineral working	No alternatives to be considered.	N/A	One representation suggested a more comprehensive approach to oil and gas. This is not considered to be a reasonable alternative as there are currently no oil and gas licences granted in Oxfordshire, and consequently no prospect of planning applications for oil and gas, and therefore no need for detailed policy.
Policy M8: Safeguarding mineral resources	No alternatives to be considered.	N/A	None
Policy M9: Safeguarding mineral infrastructure	No alternatives to be considered.	N/A	One representation suggested that the rail siding at Appleford should not be safeguarded beyond the end date of the landfill. This is not considered to be a reasonable alternative as the site has permanent planning permission.
Policy M10: Restoration of mineral workings	No alternatives to be considered.	N/A	None

5.4.1 Summary of Minerals Strategy Alternative Considerations

As detailed above, reasonable alternatives have been considered for the Minerals Strategy element of the Core Strategy. The policies that consider the quantity and location of activity have been subject to the most extensive consideration of alternatives as they are the policies that 'drive' the Minerals Strategy and through which there is the greatest potential for significant effects to result, both positive and negative. For some of the supporting policies within the Minerals Strategy no reasonable alternatives were identified as the policies either follow national policy and guidance, and hence have no alternatives, or because of the procedural nature of the policy.

The Council consider that the selected alternatives that have been included in the Minerals Strategy element of the Core Strategy incorporating Main Modifications are the most appropriate for delivering the MWLP's objectives.

5.5 Waste strategy alternatives

This section provides information on the alternatives that have been considered during the post-Examination Hearings process to undertake the further SEA/SA required and finalise the Main Modifications that Oxfordshire County Council will be proposing to publish for consultation.

Table 5-2 provides information on the alternatives that have been considered for the policies that make up the Waste Strategy element of the Core Strategy. It provides information on the reasonable alternatives considered, where they exist, for each policy; information on potential alternatives that were not considered to be reasonable, with explanations as to why this was considered to be the case; a summary the findings of the assessments undertaken by LUC on the alternatives (see Appendix D); and reasons for selecting the alternative that has been taken forward for inclusion in the Core Strategy incorporating Main Modifications.

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Table 5-2: Waste Strategy Alternatives

<table>
<tr><th>Waste Strategy Policy</th><th>Reasonable alternatives to be assessed at the Main Modifications stage</th><th>Findings of the LUC assessment of the reasonable alternatives</th><th>Alternatives that are not considered to be reasonable</th></tr>
<tr><td>Policy W1: Oxfordshire waste to be managed</td><td>The Examination Inspector concluded that the figures shown for MSW and C&I waste in the table within policy W1 on page 17 of Examination Document M9/1 should be included in the revision to policy W1, and that no figures should be shown in the revision of policy W1 for the CDE waste stream.

There are therefore no reasonable alternatives to consider at this stage in the development of the Core Strategy.</td><td>N/A</td><td>Alternative relating to self-sufficiency versus the Core Strategy's current approach for net self-sufficiency.

Self-sufficiency is not considered to be a reasonable alternative given lack of Waste Planning Authority control over cross-boundary movement (out of and in to the County) of most waste; and because it is implicitly inconsistent with the National Planning Policy for Waste (paragraph 3).</td></tr>
<tr><td>Policy W2: Oxfordshire waste management targets</td><td>A. For C&I waste, an alternative policy approach was put forward via representations relating to the rate of increase in recycling targets post-2021. Consideration was given to whether these targets are achievable and whether the slower rate of increase put forward by the Council's consultants BPP Consulting in February 2014 (Document 6.4c) should be used instead. The two alternatives assessed were as follows:

Option 1. Submitted Plan targets for C&I recycling
<table><tr><td>Year</td><td>2016</td><td>2021</td><td>2026</td><td>2031</td></tr><tr><td>C&I dry recycling target</td><td>55%</td><td>60%</td><td>65%</td><td>65%</td></tr></table>
Option 2. BPP report (Feb 2014) targets for C&I</td><td>Options 1 and 2 perform similarly against all SA objectives. This is due to the fact that under both scenarios, the C&I dry recycling target is set to reach 65% by 2031. Option 1 aims to achieve this sooner than Option 2.

In achieving the 65% target five years earlier than Option 2, less waste will be sent to landfill for a longer time under Option 1. As such, the overall amount of waste sent to landfill in Option 1 will be less than under Option 2, thus Option 1 would require less land-lake for landfill than Option 2.

In reducing land-take for waste management, both options are likely to</td><td>None</td></tr>
</table>

<table>
<tr><th>Waste Strategy Policy</th><th>Reasonable alternatives to be assessed at the Main Modifications stage</th><th>Findings of the LUC assessment of the reasonable alternatives</th><th>Alternatives that are not considered to be reasonable</th></tr>
<tr><td></td><td>recycling
<table><tr><td>Year</td><td>2016</td><td>2021</td><td>2026</td><td>2031</td></tr><tr><td>C&I recycling target</td><td>55%</td><td>60%</td><td>60%</td><td>65%</td></tr></table></td><td>have positive effects with regards to SA Objectives 1 (biodiversity and geodiversity), 2a (landscape), 2b (historic environment) and 9 (soils). Along with SA Objectives 4 (air quality), 6 (flood risk) and 7 (transport effects), effects of both options remain uncertain, as many effects depend on the location of any future waste facilities. However, provision of new waste management facilities could lead to negative effects with regards to these SA Objectives, through land-take and provision of industrial development in areas where this may not currently be the case. Such effects are dependent on the location of new facilities and any mitigation measures implemented in their development and design.

Both options may help minimise groundwater pollution and greenhouse gas emissions from landfill sites (SA Objectives 3 and 5). Both options will also help waste move up the waste hierarchy by aiming to divert more waste from landfill (SA Objective 10). Increasing levels of recycling could lead to a reduced demand for landfill, resulting in fewer communities being affected by landfill sites (SA Objective 8). By reaching the 65% target sooner, and therefore reducing waste sent to landfill overall, Option 1 would perform better with regards to</td><td></td></tr>
</table>

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
		these factors, but this is not expected to be by such an extent to be able to distinguish between a minor effect (- or +) and a significant effect (-- or ++).	
	Option selected for inclusion in the Core Strategy incorporating proposed Main Modifications: Based on the findings of the assessment Option 1 has been incorporated into the Core Strategy incorporating proposed Main Modifications. This option is the same approach as in policy W2 in the submitted Core Strategy, which is therefore unchanged in this respect. **Reasons for selecting the preferred alternative and rejecting the others:** The assessment of the two alternatives identifies Option 1 as being the more sustainable option as it is expected that it will result in more waste overall being diverted from landfill than would be the case under Option 2. Consequently Option 1 is expected to be the better of the two alternatives in terms of delivering Waste Planning Objective 3.7iii (waste hierarchy) of the MWLP. For these reasons, Option 1 has been chosen and Option 2 has been rejected.		
	B. For CDE waste, an alternative policy approach was put forward via representations and was also discussed at the Examination relating to the recycling targets post-2021. A suggested modification to Policy W2 (in Examination Document M9/1) amended the targets to those used in an earlier version of the Core Strategy. The Inspector noted in his Interim Report (para. 61) that there was agreement that the target for CDE waste recycling in policy W2 should be increased for 2026 and 2031 to 65% and 70% respectively. For purposes of completeness this change was assessed as a reasonable alternative to the approach in the Submitted Plan. The two alternatives assessed were as follows: Option 1. Submitted Plan targets for CDE recycling	*Options 1 and 2 perform similarly against all SA objectives. This is due to the fact that under both scenarios, the CDE dry recycling target would increase. Option 2 is considered to be more sustainable than Option 1, as it involves higher recycling targets, which are likely to lead to a lower proportion of waste being sent to landfill, resulting in a greater reduction in the land-take required for waste management.* *In reducing land-take for waste management, both options are likely to have positive effects with regards to SA Objectives 1 (biodiversity and geodiversity), 2a (landscape), 2b (historic environment) and 9 (soils). Along with SA Objectives 4 (air quality), 5 (greenhouse gas emissions), 6 (flood risk) and 7 (transport effects), effects of both options*	

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<tr><td></td><td>
<table>
<tr><td>Year</td><td>2016</td><td>2021</td><td>2026</td><td>2031</td></tr>
<tr><td>CDE recycling target</td><td>55%</td><td>60%</td><td>60%</td><td>60%</td></tr>
</table>
Option 2. Suggested modification targets for CDE recycling
<table>
<tr><td>Year</td><td>2016</td><td>2021</td><td>2026</td><td>2031</td></tr>
<tr><td>CDE recycling target</td><td>55%</td><td>60%</td><td>65%</td><td>70%</td></tr>
</table>
</td><td>remain uncertain, as many effects depend on the location of any future waste facilities. However, provision of new waste management facilities could lead to negative effects with regards to these SA Objectives, through land-take and provision of industrial development in areas where this may not currently be the case. Such effects are dependent on the location of new facilities and any mitigation measures implemented in their development and design. Both options may help minimise groundwater pollution (SA Objective 3) and help waste move up the waste hierarchy by aiming to divert more waste from landfill (SA Objective 10). Increasing levels of recycling could lead to a reduced demand for landfill, resulting in fewer communities being affected by landfill sites (SA Objective 8). By having higher recycling targets and therefore diverting more waste away from landfill, Option 2 would perform better with regards to these factors, but this is not expected to be by such an extent to be able to distinguish between a minor effect (- or +) and a significant effect (-- or ++).</td><td></td></tr>
<tr><td></td><td colspan="3">Option selected for inclusion in the Core Strategy incorporating proposed Main Modifications: Based on the findings of the assessment Option 2 has been incorporated into the Core Strategy incorporating proposed Main Modifications. This option differs from the approach in policy W2 in the submitted Core Strategy and is therefore the subject of a proposed Main Modification to the Core Strategy.

Reasons for selecting the preferred alternative and rejecting the others: The assessment of the two alternatives identifies Option 2 as being the more sustainable option as it is expected that it will result in more waste overall being diverted from landfill than would be the case under Option 1.</td></tr>
</table>

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
	Consequently Option 2 is expected to be the better of the two alternatives in terms of delivering Waste Planning Objective 3.7iii (waste hierarchy) of the MWLP. For these reasons, Option 2 has been chosen and Option 1 has been rejected.		
Policy W3: Provision for waste management capacity	For the waste facility types 'Composting / food waste treatment' and 'Non-hazardous waste recycling' (for MSW and C&I wastes), and 'inert waste recycling' (for CDE waste), the following alternatives were considered during the development of the Main Modifications: 1. An approach to use any additional capacity requirement as a cap for the amount of provision to be made (as inferred by the wording of policy W3 in the Submitted Plan). 2. An approach to use any additional capacity requirement as a minimum amount of provision to be made which can be exceeded if suitable sites are available, with no cap on provision and no requirement for need to be demonstrated. For 'Composting / food waste treatment' and 'Non-hazardous waste recycling', the additional capacity requirement can be calculated by applying the recycling targets in policy W2 to the figures that the Inspector has concluded should be shown in policy W1 for MSW and C&I wastes, taking into account the capacity available at existing facilities. Whilst the Inspector concluded that no figures for CDE waste should be shown in policy W1, it would be possible to calculate the additional capacity requirement for inert waste	*Options 1 and 2 generally have similar effects with regards to most SA Objectives, although Option 2 is expected to have more positive effects in comparison to Option 1 as it allows greater flexibility should demand exceed forecasted figures.* *Option 2 may reduce the amount of land-take for landfill in comparison to Option 1, although this would depend on how any additional waste, for which recycling or composting/food waste treatment capacity was not provided in Oxfordshire under Option 1, was managed. A reduction in land take for landfill could lead to positive effects on biodiversity, landscape and the historic environment.* *In further reducing land-take for landfill, Option 2 is more likely to have positive effects with regards to SA Objectives 1 (biodiversity and geodiversity), 2a (landscape), 2b (historic environment) and 9 (soils). . Option 2 is also expected to perform better against SA Objective 3 (water quality) and SA Objective 7 (transport). Uncertain remains against many objectives for both Options 1 and 2, as effects are largely dependent on the locations at which new facilities are*	None

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
	recycling based on best available forecasts of Oxfordshire's CDE waste and the targets in policy W2, taking into account the capacity available at existing facilities. An alternative approach to provision for CDE waste recycling was put forward at the Hearings (Documents H10 & H17aa), involving a positive policy approach to maximise delivery of recycled material and diversion of waste from landfill, with no requirement to demonstrate need. This was an alternative to what was seen as the approach in the submitted plan of using the additional capacity requirement as a cap for the amount of provision to be made. This alternative is contained within alternative 2 above, which seeks to maximise suitable opportunities for recycling and sets no cap on provision and no requirement for need to be demonstrated.	*provided.* *In potentially allowing for more waste facility capacity over the county's targets, Option 2 may have more scope to achieve self-sufficiency and economic gains (SA Objectives 11 and 12).*	
	Option selected for inclusion in the Core Strategy incorporating proposed Main Modifications: Based on the findings of the assessment Option 2 has been incorporated into the Core Strategy incorporating proposed Main Modifications. This option differs from the approach in policy W3 in the submitted Core Strategy and is therefore the subject of a Main Modification to the Core Strategy. **Reasons for selecting the preferred alternative and rejecting the others:** The assessment of the two alternatives identifies Option 2 as being the more sustainable option, as the positive policy approach (i.e. not including a cap) to provision of facilities that would move the management of waste up the waste hierarchy is expected to allow more waste to be diverted from landfill, and thereby reduce land-take associated with landfill sites. Option 2 may also have more scope to achieve self-sufficiency and economic gains than Option 1. Consequently Option 2 is expected to be the better of the two alternatives in terms of delivering Waste Planning Objectives 3.7iii (waste hierarchy), 3.7viii (prioritise previously developed land) and 3.7i (net self-sufficiency) of the MWLP. For these reasons, Option 2 has been chosen and Option 1 has been rejected.		

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
Policy W4: Locations for facilities to manage the principal waste streams	Through representations and discussions at the Examination Hearing a range of alternatives have been suggested for inclusion in policy W4. These relate to the size of the zones around Oxford and other towns, the inclusion of Banbury as a potential location for strategic waste management facilities, the inclusion of the smaller towns (e.g. Carterton) as potential locations for non-strategic waste management facilities and the potential location of any size of facility at any of the specified locations. In addition, suggested modifications included in Examination Document M9/1, amend policy W4 to include provisions relating to proximity to lorry routes that are covered in the supporting text to policy W4. Similarly, issues relating to constraints on locations placed by AONBs and SACs that are included in the supporting text to policy W4 could be included in modifications to policy W4, with cross references to policies C8, C7 and C12 (proposed new policy on Green Belt in Document M9/1b). Consequently four potential alternatives to the locational strategy provided in policy W4 were developed for assessment. The five alternatives to be assessed are summarised below: • Option 1: Policy as included in the Submission Core Strategy • Option 2: This alternative does not add any new 'overall Plan' requirements, but brings into policy elements that were previously	*Options 3 and 4 generally perform better in terms of sustainability than Options 1, 2 and 3. This is because Options 3 and 4 allow development of a strategic waste facility at Banbury and non-strategic waste facilities at smaller towns, in addition to the locations for waste facilities identified in Options 1 and 2. This would lead to a wider distribution of waste facilities across Oxfordshire, which would reduce the transportation distance between locations of waste arisings and waste management facilities and a reduction in greenhouse gas emissions associated with such transportation (SA Objectives 5 and 7). Option 4 would also allow non-strategic waste facilities to be located around smaller towns, which will further add to increasing the distribution of waste facilities. Whilst Option 5 would lead to a greater dispersal of waste facilities across the county, this may lead to strategic waste facilities being located a considerable distance from the main areas of waste arisings, which could lead to increased transport distances from arisings to management facilities and associated greenhouse gas emissions.* *Uncertainty has been recorded against all options with regards to SA Objectives 1, 2a, 2b, 3, 4, 6, 8 and 9, as effects on these objectives are largely dependent on the*	Alternatives to the categorization of size of facilities should be assessed (including that small-scale should be under 50,000tpa and strategic should be more than 100,000tpa; and that strategic should be more than 75,000tpa for inert waste recycling facilities). The consideration of different tonnage figures for the different scales of facility is not in itself considered to be a policy choice (the policy choice comes in deciding where different sized facilities should be located) and therefore is not considered to be a reasonable alternative for the Core Strategy. Alternative to include larger scale facilities in AONB in locational strategy. In the light of policy on AONB in the NPPF, as reflected in policy C8 of the Core Strategy, this is not considered to be a reasonable alternative to include in Policy W4. Policy W4 does not exclude the possibility of larger facilities being located in AONB as it includes the word 'normally' to allow for exceptions where these are appropriate having due regard to national policy and other relevant policies of the plan. Alternative to include large scale facilities in rural areas in the locational strategy. The inclusion of large scale facilities in rural areas as a generality is not considered to be a reasonable alternative to include in policy W4. Clauses a) and b) of policy W4 include the word 'normally', which allows the possibility of strategic and non-strategic facilities being located other than in or close to the specified towns. This means that policy W4 does not exclude the possibility of large

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
	covered in supporting text. These cover the following areas: access to the lorry route network; Areas of Outstanding Natural Beauty (AONB); and Special Areas of Conservation (SAC). • Option 3: This option builds on Option 2 by 'reclassifying' Banbury as a location for strategic waste management facilities and expanding the zone around Oxford from 10km to 15km. • Option 4: This alternative builds on Option 2 by 'reclassifying' Banbury as a location for strategic waste management facilities and expanding the zone around Oxford from 10km to 15km (as in Option 3), and adding small towns with 2km zones to element b), locations for non-strategic waste management facilities. • Option 5: This option is a dispersal strategy which combines elements a) and b) in Option 2 to locate both strategic and non-strategic waste management facilities at all of the specified locations, including within an expanded 15km zone around Oxford and at the small towns with 2km zones. In response to representations, suggested modifications included in Examination Document M9/1 amended the supporting test to policy W4 (paragraphs 5.33 and 5.34) to take out references to locations in Green Belt being avoided and instead to state that locations in	*exact locations of future waste management facilities. Options 2, 3, 4 and 5 state in the policy that development will not take place within SACs and will not take place within AONBs, unless the 'major development test' is met, which could result in greater sustainability implications with regards to SA Objectives 1 (biodiversity and geodiversity) and 2a (landscape). Options 2, 3, 4 and 5 may open up more rural areas to the possibility of strategic waste facilities by allowing provision of these where there is access to the lorry route network. This could lead to negative impacts with regards to biodiversity and landscape, as more rural areas are more likely to be sensitive to such impacts. Alternatively, this could contribute to the rural economy and reduce economic disparities across the county by providing employment and investment in more rural areas (SA Objective 12).* *Options 2, 3, 4 and 5 could lead to more dispersed development locations for waste facilities, which could allow facilities to be located nearer to waste arisings. Options 3, 4 and 5 could lead to development of waste facilities nearer the boundary of Oxfordshire. This could attract in waste from other local authorities, thereby reducing self-sufficiency (SA Objective 11).*	facilities being located in rural areas. In addition, suggested modifications included in Document M9/1, amend policy W4 to include provisions relating to proximity to lorry routes that are currently covered in the supporting text to policy W4, which could potentially allow a large facility to be located in a rural area where it would have good access to the lorry route network. This suggested modification is included in alternatives 2 to 5 for policy W4 that are to be assessed (see Appendix A). In more remote rural areas, facilities larger than small-scale would be unacceptable. Therefore an alternative to include large scale facilities in rural areas in the locational strategy is not considered to be a reasonable alternative.

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
	Green Belt will be considered against policy W5 in line with the NPPF. Examination Document M9/1b suggested a modification to include a new policy (C12) on Green Belt (to replace the reference to Green Belt in policy W5). In the light of this, and reflecting that policy W4 does not refer to locations in Green Belt, the Waste Key Diagram should be amended to show the Green Belt as a transparent layer over the waste areas and not as a solid 'exclusionary' layer.		
	Option selected for inclusion in the Core Strategy incorporating proposed Main Modifications: Based on the findings of the assessment Option 4 has been incorporated into the Core Strategy incorporating proposed Main Modifications. This option differs from the approach in policy W4 in the submitted Core Strategy and is therefore the subject of a Main Modification to the Core Strategy. **Reasons for selecting the preferred alternative and rejecting the others:** The assessment of the five alternatives identifies Options 3 and 4 as being the more sustainable options, with Option 4 being the slightly more sustainable option of these two. This is because Options 3 and 4 are expected to lead to a wider distribution of waste management facilities across the county and provide larger scale facilities where waste arisings are likely to be greatest, which is expected to lead to positive effects with regards to reduced transport impacts and greenhouse gas emissions (in line with Waste Planning Objectives 3.7iv (proximity principle) and 3.7v (distribution of waste management facilities) of the MWLP). Additional sustainability benefits associated with Option 4 have also been identified as this would allow non-strategic waste management facilities to be located at or close to smaller towns, and this would increase the distribution of waste management facilities in relation to waste arisings (further in line with Waste Planning Objective 3.7v of the MWLP) and maximise advantages associated with transport and greenhouse gases (further in line with Waste Planning Objectives 3.7iv and 3.7v of the MWLP). Therefore, Option 4 has been chosen over Option 3 for inclusion in the Core Strategy incorporating proposed Main Modifications as it would result in slightly greater sustainability benefits and perform slightly better in terms of helping to deliver the Waste Planning Objectives of the MWLP. The assessment shows that Options 1 and 2 are likely to be too restrictive to provide the necessary distribution of waste management facilities required to provide for waste arisings where they are expected to be greatest, therefore leading to increased transport distances and associated transport and greenhouse gas impacts. For this reason, these alternatives have been rejected. Option 5 would lead to the distribution of facilities necessary to provide for waste arisings where they are expected to be greatest but this option would also allow large scale (strategic) facilities in in areas of the county where waste arisings are small. This may lead to strategic facilities being located at a considerable distance from the main areas of waste arisings, thereby increasing transport distances and associated transport and greenhouse gas impacts. For this reason, Option 5 has been rejected.		

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
Policy W5: Siting of waste management facilities	The proposed Main Modifications for this policy will be assessed along with the other Main Modifications. The element of the policy that relates to Green Belt is now proposed to be included in a new Core Policy (C12). That new policy will also be assessed with the other Main Modifications. There no new alternatives to be considered.	N/A	Alternative to remove presumption against greenfield development Document M9/1 included a modification to amend policy W5 to allow for greenfield locations in line with national policy and guidance. It is the Council's intention to include this in the Main Modifications and so it will be assessed along with the other Main Modifications. No need to consider as an alternative.
			Alternative approaches to temporary recycling facilities at the cessation of the host activity. Approach to remove unless a separate application for retention is successful (approach in submitted Core Strategy) versus approach with presumption for retention unless there is an overriding case for removal. These are alternative policy wordings rather than distinct policy approaches and therefore this is not considered to be a reasonable alternative.
			Alternative to include restored mineral sites as priority in locational strategy. Restored mineral sites are greenfield locations, the inclusion of which as priority locations would be contrary to national policy and guidance. Therefore this is not considered to be a reasonable alternative.
Policy W6: Landfill	No alternatives to be considered.	N/A	Sutton Courtenay landfill should not be extended Not a reasonable alternative for the Waste Strategy as it is a site specific issue.
Policy W7:	No alternatives to be considered.	N/A	None

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
Management and disposal of hazardous waste			
Policy W8: Management of agricultural waste	No alternatives to be considered.	N/A	None
Policy W9: Management and disposal of radioactive waste	Policy amendment detailed in Examination Document M9/1b will be assessed with other Main Modifications. This amendment takes into account the Statement of Common Ground between OCC and Magnox - allowing for treatment and disposal of radioactive waste across the NDA estate. No alternatives to be considered.	N/A	None
Policy W10: Management and disposal of waste water/sewage	No alternatives to be considered.	N/A	None
Policy W11: Safeguarding waste management sites	An alternative policy approach was put forward via representations and was discussed at the Examination Hearing. This related to the inclusion of temporary waste management sites, with permissions that expire before the end of the plan period, within the sites that should be safeguarded for waste use. A suggested modification to Policy W11 included in Examination Document M9/1b would allow for	*Both options are assessed as having neutral effects against all objectives except SA Objectives 5, 7, 10, 11 and 12. This is mainly because this is a non-spatial policy, which does not allocate any particular locations for development, as it relates to safeguarding sites, rather than allocating them.*	Alternative to safeguard existing facilities on industrial estates. No need to consider as an alternative. If they are existing permitted facilities on industrial estates then they will be safeguarded under the current policy. Alternative to safeguard existing waste sites already in use – except Sutton Courtenay. Not a reasonable alternative as this is a site specific issue

Waste Strategy Policy	Reasonable alternatives to be assessed at the Main Modifications stage	Findings of the LUC assessment of the reasonable alternatives	Alternatives that are not considered to be reasonable
	the safeguarding of such temporary sites for the duration of their planning permission. For purposes of completeness this change was assessed as a reasonable alternative to the requirements in the Submitted Plan. The alternatives assessed were therefore as follows: 1. The Submitted Plan approach to not allow for temporary waste management sites to be safeguarded where the planning permission expires before the end of the plan period. 2. The suggested modification approach to safeguard all permitted waste management sites for the duration of their planning permission, whether or not the permission allows the use to continue to the end of the plan period.	*Option 2 performs slightly better than Option 1 in the short- to medium-term, as it may allow greater capacity for waste management and therefore greater flexibility to accommodate demand greater than that forecast. Option 2 may allow more waste to be managed within the county, which could reduce transportation of waste to other authority areas, thus reducing transport distances and associated greenhouse gas emissions. This could also allow a greater level of self-sufficiency in the county.*	that would be considered in the Part 2 plan. In addition landfills are not a category of site that would be covered under policy W11 (see paragraph 5.100 and Appendix 2 of the submitted Core Strategy).
	Option selected for inclusion in the Core Strategy incorporating proposed Main Modifications: Based on the findings of the assessment Option 2 has been incorporated into the Core Strategy incorporating proposed Main Modifications. This option differs from the approach in policy W11 in the submitted Core Strategy and is therefore the subject of a Main Modification to the Core Strategy **Reasons for selecting the preferred alternative and rejecting the others:** The assessment of the two alternatives identifies Option 2 as being the more sustainable option as it is likely that it will secure more waste management capacity in Oxfordshire, at least in the shorter term, therefore contributing to the county's ability to be net self-sufficient in waste management (in line with Waste Planning Objective 3.7i (net self-sufficiency) of the MWLP). Option 1 would not secure current waste management capacity which may restrict the county's ability to be self-sufficient in waste management. For these reasons, Option 2 has been chosen and Option 1 has been rejected.		

5.5.1 *Summary of Waste Strategy Alternative Considerations*

As detailed above, reasonable alternatives have been considered for the Waste Strategy element of the Core Strategy. The policies that consider the quantity and location of waste management activity have been subject to the most extensive consideration of alternatives as they are the policies that 'drive' the strategy and through which there is the greatest potential for significant effects to result, both positive and negative. For some of the supporting policies within the Waste Strategy no reasonable alternatives were identified as the policies either follow national policy and guidance, and hence have no alternatives, or because of the procedural nature of the policy.

The Council consider that the selected alternatives that have been included in the Waste Strategy element of the Core Strategy incorporating Main Modifications are the most appropriate for delivering the MWLP's objectives.

5.6 Core Policies for Minerals and Waste

5.6.1 *Purpose of the Core Policies*

The policies in the Minerals Strategy and the Waste Strategy are supported by a set of Core Policies include development management criteria that provide protection for those topics covered by the policies (e.g. landscape).

5.6.2 *Reasonable alternatives considered for the Core Policies*

All the policies in their submitted form were considered to be in alignment with the NPPF.

No options for any of the policies were considered during the development of the Core Strategy as these 'development control' policies cover criteria and details relating to each topic, rather than setting 'levels of activity' or 'locations for any activity' the implementation of which could result in significant effects.

As part of the Proposed Main Modifications a new core policy relating to Green Belt has been included. This replaces the requirements that were previously included in policy W5. As with the other core policies no alternatives were considered during the development of this new policy.

In addition Main Modifications have been proposed for core policies C4 (Water environment), C6 (Agricultural land and soils), C7 (Biodiversity and Geodiversity) and C8 (Landscape), but given their nature no alternatives have been considered for those modifications.

5.7 Summary

Based on the work undertaken on all the previous stages described in Sections 5.1 to 5.6 above the preferred strategy and policies for minerals and waste development, along with the supporting Core Policies were included in the Publication version of the Core Strategy and subsequently have been updated during the post-Examination Hearings stage to be included in the Core Strategy incorporating Main Modifications.

6 Proposed Main Modifications and Additional Modifications

Post-Examination Hearings update

This is a new section of the SA Report which provides information relating to the implications that the proposed Main Modifications and Additional Modifications are likely to have on the findings of the previous SEA/SA and HRA work.

6.1 Introduction

The aim of this screening stage in the SEA/SA process is to determine whether there are likely to be any significant sustainability effects arising from the proposed Main Modifications and Additional Modifications to the Core Strategy and to consider whether there is a need to update the findings documented in previous SA Reports.

6.2 Screening

It would not be proportionate to undertake a full assessment on all of the proposed Main Modifications and it is therefore necessary to first identify which, if any, of the Main Modifications could potentially result in significant effects or alterations to the previous assessments, so that the assessment can focus on those specific modifications.

This was accomplished through an initial screening process which considered the significance of each of the proposed Main Modification and Additional Modifications and whether they would have implications of the previous findings of the SA. The screening used three levels of categorisation for the potential implications of each of the proposed modifications on the original sustainability appraisal as follows:

- No implications for the SA;
- Implications (either positive or negative) from the Proposed Modifications to the supporting text for SA objectives but assessment will be undertaken during the assessment of the related Core Strategy policy; or
- Modification to a Core Strategy policy requires an additional/updated assessment.

The full schedules of proposed Main Modifications and Additional Modifications are provided in Appendix E.

6.3 Assessment

6.3.1 Methodology

Those changes that the screening process identified as requiring an additional/updated assessment were then assessed against the SA Objectives using the methodology utilised for all previous rounds of SEA/SA. Details of this methodology are provided in Section 7 of this SA Report Update.

6.3.2 Screening outcome

The results of the screening process for the proposed Main Modifications are detailed in Appendix E to this SA Report Update and can be summarised as follows:

The 76 proposed Main Modifications were categorised as follows:

- 20 Main Modifications with no implications for the SEA/SA, either due to the minor nature of the policy change or due to the change being to supporting text and not having any bearing on the requirements of the associated policy;
- 34 Main Modifications to supporting text with implications (either positive or negative) for SA objectives which have been assessed during the assessment of the related Core Strategy policy; and
- 22 Main Modifications to policies with implications of a nature that require an update to the original assessment (see Section 6.3.3 and the relevant updated assessment in Appendix F).

For all of the Additional Modifications the screening found that there were no implications for the SEA/SA.

6.3.3 Updates to Assessments

For those Main Modifications which were identified as having implications for the previous assessment of the equivalent Submission policy updated assessments have been prepared to take account of these Main Modifications - see Appendix F, in particular the text boxes with the ▞ symbol which describe how the assessments have been updated to take account of the Main Modifications. Where relevant these assessments were informed by the additional assessments of alternatives that were undertaken by LUC (see Appendix D).

These updated assessments identified additional significant effects relating to the following policy versus SA objective relationships:

- Policy M9 (Safeguarding mineral infrastructure) in relation to the SA objectives on transport effects (SA7) in the short, medium and long term, and economic growth (SA12) in the medium and long term. These significant effects relate to the addition to the policy of rail depot sites to be safeguarded. NB: these are not 'new' significant effects but have been 'transferred' from the assessment of policy M6 in the submitted Core Strategy – that policy previously having included rail depot sites.
- Policy M10 (Restoration of mineral workings) in relation to the SA objective on soils (SA9) in the long term. This reflects the proposed Main Modification to the policy that adds the restoration of best and most versatile agricultural land and the conservation of soil resources as criteria to take into account during restoration and after-use of mineral workings.
- Policy W4 (Locations for facilities to manage the principal waste streams) in relation to the SA objectives on greenhouse gas emissions (SA5) in the medium and long term and transport effects (SA7) in the medium and long term. This reflects the findings of assessments which were undertaken during the consideration of alternatives for the location of waste management facilities. The significant positive effects relate to the proposed Main Modification that would enable waste management facilities to be located closer to waste arisings than would have been the case under the submitted policy.

The updated assessments also identified that effects were no longer significantly positive relating to the following policy versus SA objective relationships:

- Policy M3 (Principal locations for working aggregate minerals) in relation to the SA objective on self-sufficiency (SA11) in the medium and long term. This reflects the findings of assessments which were undertaken during the consideration of alternatives for the distribution of additional provision for sharp sand and gravel working. The principal locations

for working aggregate minerals included in the policy do not result in significant positive effects against the self-sufficiency objective.

- Policy M6 (Aggregate rail depots) in relation to the SA objectives on transport effects (SA7) in the short, medium and long term, and economic growth (SA12) in the medium and long term. These significant effects have been 'transferred' to the assessment of policy M9 as that policy now safeguards rail depot sites (see Policy M9 above).

No significant negative effects were identified in the new assessments.

6.3.4 Implications for Habitats Regulations Assessment

None of the proposed Major Modifications or Additional Modifications have been found as having any implications for the existing findings of the Habitats Regulations Assessment. See Appendix E for the screening of the Main Modifications and the Additional Modifications.

Therefore the conclusions of the Core Strategy HRA Report, as summarised in Section 1.8, continue to remain unchanged.

7 Assessment of the Core Strategy incorporating Main Modifications

Post-Examination Hearings update

This section has been updated to reflect the findings of the updated assessments that take account of the proposed Main Modifications – see Appendix F.

7.1 Introduction

Proposed Main Modifications to the Core Strategy, originally suggested at the Examination Hearings through Examination Document M9/1b, and the Inspector's Interim Report, have been updated to take into consideration the discussions during the Examination hearings and the findings of the SEA/SA activities in considering alternatives to several of the Core Strategy policies (see Appendix D).

There is therefore a requirement to update the SEA/SA so that the assessment is based on the Core Strategy incorporating the Proposed Main Modifications – and not on the Submitted Core Strategy policies, as assessed in the August 2015 SA Report.

7.2 Assessment methodology

The updated SEA/SA has used the same methodology as used in the August 2015 SA Report. The assessment has been documented using a standard matrix to record the likely effects of policies upon each SA objective. All of the SA Objectives have been afforded the same level of importance in this assessment, with no weighting of objectives having been used.

The appraisal used the assessment 'scoring' criteria as outlined in Table 7-1. The effects were also forecast in terms of their:

- Permanence (permanent or temporary);
- Scale (local - within the County, regional - affecting local neighbouring authorities or national/international - affecting UK or a wider global impact);
- Duration (in the short term - 0-5 years, medium term - 5 years to the end of the plan period in 2031 or long term - After life of plan (post 2031)); and
- Reversibility (reversible effect - environmental effect that can be reversed, for example an incident of water pollution can be cleaned up over time, or irreversible effect - environmental effect that cannot be reversed such as the loss of a historic feature or the loss of agricultural soil due to permanent development).

Where appropriate the assessment also identified cumulative/synergistic effects, cross-boundary effects and interrelationships between the SA objectives.

The assessments undertaken in the post-Examination Hearings stage have been informed by information in the Evidence Base Documents included in Appendix G to this report.

Table 7-1: Assessment Criteria

Significance Assessment	Description
++	The option is likely to have a significant positive effect
+	The option is likely to have a positive effect which is not significant
0	No effect / no clear link
?	Uncertain or insufficient information on which to determine effect
-	The option is likely to have a negative effect which is not significant
- -	The option is likely to have a significant negative effect
+/-	The option is likely to have some positive and some negative effects

7.2.1 Cross boundary effects

Where mineral extraction activities in Oxfordshire are based close to the borders of other local authorities (counties and boroughs), for example the sand and gravel site in Caversham close to Reading Borough, there are likely to be effects felt in these neighbouring areas. In cases of very close proximity, it is possible that all the direct effects forecast for the plan area (air quality, noise, water quality etc.) could also be experienced in the neighbouring authority. Where there is a greater distance involved, effects could still be encountered, for example increased traffic associated with minerals haulage, and changes in hydrology.

7.2.2 Inter-relationships

The SEA topics cannot be considered in isolation from one another, as there are a variety of inter-relationships that exist. Air quality is a topic which cuts across most of the other SEA topics, with proven links between air quality and human health (respiratory problems). It can also have indirect effects on biodiversity, soil and water quality, and the condition of heritage assets, whilst there is a more direct link between traffic emission causing poor air quality and the emissions of CO_2.

Minerals and waste operations may show inter-related effects on criteria such as biodiversity, air quality, greenhouse gas emissions, landscape and townscape depending on where they are located, how the development takes shape/is designed, the processes involved and how it is accessed.

Positive effects can also occur from inter-relationships, for example, protecting landscape quality and/or soil, may lead to habitats and species being indirectly protected.

7.3 Summary of the assessment

Based on the methodology described above, all Core Strategy policies, as amended by proposed Main Modifications, were assessed and the results presented as detailed assessment matrices in Appendix F. The sections that follow summarise the results of the assessments for each Core Strategy element, followed by a summary of the assessment by SA objective (including any cumulative, synergistic and secondary effects).

7.3.1 Minerals Planning Strategy

7.3.1.1 Vision and Objectives

A detailed assessment has not been undertaken on the Minerals Planning Vision and Objectives (listed in Section 2.2.1) but instead they have been assessed for their compatibility with the SA objectives. This is detailed in Section 4.5 of this report.

7.3.1.2 Summary of Policy Assessments

Table 7-2 below provides a summary of the assessments carried out for each of the minerals planning policies. These are split by duration of effects (short, medium and long term).

Table 7-2: Summary table of assessments of the Minerals Planning Policies

Plan Elements (abridged)	Duration (Short/Medium/Long term)	SA Objectives (abridged)												
		1	2a	2b	3	4	5	6	7	8	9	10	11	12
		Biodiversity & Geodiversity	Landscape	Historic Environment	Water Quality	Air Quality	Greenhouse Gas Emissions	Flood Risk	Transport Effects	Population & Health	Soils	Waste Hierarchy	Self-sufficiency	Economic Growth
Policy M1: Recycled and Secondary Aggregate	ST	+	+	+	+	?	?	?	?	?	+	+	+	+
	MT	+	+	+	+	?	?	?	?	?	+	++	+	+
	LT	+	+	+	+	?	?	?	?	?	+	++	+	+
Policy M2: Provision for working aggregate minerals	ST	?	?	?	?	?	+	?	+	+/?	?	0	+	+
	MT	?	?	?	?	?	+	?	+	+/?	?	0	++	+
	LT	?	?	?	?	?	+	?	+	+/?	?	0	++	+
Policy M3: Principal locations for working aggregate minerals	ST	+/-	-/?	-/?	-/?	+	+	0	+	-/?	-/?	0	+	+
	MT	+/-	-/?	-/?	-/?	+	+	+	+	-/?	-/?	0	+	+
	LT	+/-	-/?	-/?	-/?	+	+	+	+	+/?	-/?	0	+	+
Policy M4: Sites for working aggregate minerals	ST	+	+	+	+	+	+	+	+	+	+	0	0	0
	MT	+	+	+	+	+	+	+	+	+	+	0	0	0
	LT	+	+	+	+	+	+	+	+	+	+	0	0	0
Policy M5: Working of Aggregate Minerals	ST	?	?	?	?	?	+	?	+	?	?	0	+	+
	MT	?	?	?	?	?	+	?	+	?	?	0	+	+
	LT	?	?	?	?	?	+	?	+	?	?	0	+	+
Policy M6: Aggregates rail depots	ST	?	?	?	?	?	+	?	+	+	?	0	0	0
	MT	?	?	?	?	?	+	?	+	+	?	0	0	0
	LT	?	?	?	?	?	+	?	+	+	?	0	0	0
Policy M7: Non-aggregate mineral working	ST	+/-	+/-	+/-/?	+/-	0	?	?	-	-/?	+/?	0	0	+
	MT	+/-	+/-	+/-/?	+/-	0	?	?	-	-/?	+/?	0	0	+
	LT	+/-	+/-	+/-/?	+/-	0	?	?	-	-/?	+/?	0	0	+
Policy M8: Safeguarding mineral resources	ST	0	0	0	0	0	0	0	0	0	0	0	0	0
	MT	0	0	0	0	0	0	0	0	0	0	0	+	0
	LT	0	0	0	0	0	+	0	+	0	0	0	++	+
Policy M9: Safeguarding mineral infrastructure	ST	0	0	0	0	+	+	+/-	++	0	0	0	+	+
	MT	0	0	0	0	+	+	+/-	++	+	0	0	+	++
	LT	+/?	+/?	+/?	+	+	+	+/-	++	+	0	0	+	++
Policy M10: Restoration of mineral workings	ST	0	0	0	0	0	0	0	0	0	0	0	0	0
	MT	+	+	+	+	0	0	+	0	+	+	0	0	+
	LT	++	++	++	++	0	0	++	0	++	++	0	0	+

7.3.1.3 Policy M1: Recycled and Secondary Aggregate

Policy M1 seeks to maximise the contribution to aggregate supply from recycled and secondary aggregates. In so doing the policy will reduce the amount of waste being generated and will therefore have a significant positive effect in relation to SA10.

Production of recycled and secondary aggregates is recognised as having environmental effects broadly similar to those caused by processing of primary aggregates. The nature of any adverse effects will depend to a large extent on the exact location of sites for recycled and secondary aggregates. If these facilities exist in close proximity to active mineral workings there could be negative cumulative effects upon nearby receptors from increased traffic bringing material to sites and effects such as noise and dust which would need to be considered at the planning application stage.

Maximising the contribution to aggregate supply from recycled and secondary aggregates will reduce the level of environmental effects (e.g. on landscapes that would otherwise result if all the aggregate were to be supplied from primary sources). Minor positive effects have therefore been identified in relation to this factor for SA1 (biodiversity), SA2a (landscape), SA2b (heritage), SA3 (water quality) and SA9 (soils).

The adverse effects arising from the operation of temporary mobile units associated with individual developments are likely to be temporary and of a more local nature than from those facilities which hold long term consents. The application of the core policies to any individual applications should assist in mitigating any adverse effects.

The policy will support Oxfordshire's economic growth over the long term and in particular growth of the local economy, as recycling facilities are often located at existing quarries and landfills, thus continuing to support local jobs and businesses. Any new sites could also potentially increase local jobs and support local business.

By encouraging and enabling the production and supply of recycled and secondary aggregate this policy makes a positive contribution towards meeting Oxfordshire's local needs for aggregates. It also helps to achieve self-sufficiency in waste management. This supports SA11, self-sufficiency.

7.3.1.4 Policy M2: Provision for working aggregate minerals

The effects which might arise from a particular volume of mineral working in the County are difficult to predict based on the provision figures in policy M2 alone, as it is the spatial implications, i.e. the location and distribution of mineral working sites which will mainly determine the effects. The proposed spatial distribution of this will be determined and appraised in the future during the development of the Local Plan Part 2 – Site Allocations Document. As a result uncertain effects have been identified for many of the SA objectives. However, there are sufficient mineral resources in the county to meet the provision figures without having to undertake extraction in areas with significant constraints in terms of biodiversity, landscape or the historic environment.

The policy makes provision to enable the supply of aggregate minerals from land-won sources within Oxfordshire to meet the aggregate provision figures in policy M2. Significant positive effects have therefore been identified for SA11 (Self-sufficiency). Minor positive effects are predicted for SA12 (economy) as the policy makes provision for aggregate supply to support economic growth.

It is however recognised that effects in the longer term are more uncertain i.e. sites chosen to deliver the strategy may not come forward and other sites which may or may not be more constrained might then be needed. This uncertainty would be addressed through policy monitoring and the implementation of the core policies when planning applications come forward.

Whilst the extraction, processing and transport of minerals will inevitably result in greenhouse gas emissions, this would be the case wherever they are extracted. Enabling Oxfordshire to meet the aggregate provision figures in policy M2 will avoid the need to import aggregates into the County, with associated benefits in terms of reducing growth in greenhouse gas emissions (SA5) and reducing long-distance transport effects (SA7).

7.3.1.5 Policy M3: Principal locations for working aggregate minerals

The strategic resource areas that are identified in Policy M3 for the extraction of sharp sand and gravel, soft sand and crushed rock have environmental constraints that could result in adverse effects against the objectives for biodiversity (SA1), landscape (SA2a), heritage assets (SA2b), water (SA3) and soils (SA9). The aim to achieve an approximately equal split of production capacity for sharp sand and gravel between northern and southern Oxfordshire by 2031 could require a larger area of land to be worked in order to yield the same tonnage of sharp sand and gravel than if the current balance of production were maintained. This could result in adverse effects against the same objectives, although these effects are uncertain as they will depend on the resources and constraints at the exact location of workings. The criteria in policies M4, M10 and the core policies will ensure that these effects are either avoided or mitigated.

The aim to achieve an approximately equal split of production capacity for sharp sand and gravel has been identified as having positive effects for the air quality (SA4), greenhouse gas emissions (SA5), and transport (SA7) objectives as overall it will reduce the distances that minerals have to be transported to the main points of use.

The extraction of minerals from the SRAs identified in the policy will inevitably result in some adverse effects on local communities. However minerals can only be worked where they exist in the ground and therefore there is not the possibility of dispersing extraction across the County. The other policies in the Core Strategy will help to mitigate adverse effects of extraction in the SRAs and will also seek to enhance the environment wherever possible, particularly through restoration activities. Restoration is predicted to have beneficial effects on 'population and health' objective (SA8) in the long term.

There are also other positive effects likely from this policy, as the extraction of minerals in these areas could offer opportunities to increase flood storage capacity, thereby reducing the risk of flooding in these areas (SA6). The SRAs for sharp sand and gravel extraction are also well located in terms of proximity to the markets thereby supporting self-sufficiency (SA11) and providing potential for investment and job creation, which supports SA12 (economic growth).

7.3.1.6 Policy M4: Sites for working aggregate minerals

The criteria within policy M4 will help to ensure that the adverse effects that are associated with working aggregate minerals will be reduced or avoided. Positive effects have therefore been predicted in relation to SA1 – SA9 inclusive.

7.3.1.7 Policy M5: Working of Aggregate Minerals

Policy M5 is largely procedural and will itself not result in direct effects against the majority of objectives. Effects relating to the allocation of sites have been assessed for policies M3 and M4 and the assessment of this policy is therefore focused on the effects that would result from extraction outside the allocated sites. The majority of these effects are uncertain as much will depend on the size and location of the sites involved.

Positive effects have been identified for the SA objectives relating to self-sufficiency (SA11) and economic growth (SA12), as allowing mineral extraction in certain cases, so that needs identified under policy M2 are met and mineral sterilisation is avoided, should help to prolong Oxfordshire's self-sufficiency in aggregate supply and support the local economy.

In relation to the potential to reduce transportation distances, the provision for borrow pits to be permitted as exceptions has been identified as having positive effects for the SA objectives relating to greenhouse gas emissions (SA5) and transport (SA7).

7.3.1.8 Policy M6: Aggregates rail depots

Through enabling new aggregate rail depots to be developed in suitable locations policy M6 has been identified as having positive effects in relation to SA5 (greenhouse gas emissions), SA7 (transport) and SA8 (population) as it supports the reduction of road based aggregate transport, thereby reducing the long term cumulative adverse effects on the environment, local communities and local road network experienced by long distance transport of aggregates by road. The effects relating to the other environmental objectives will be dependent on the location of any future aggregates rail depots and therefore uncertain effects have been identified for those objectives.

7.3.1.9 Policy M7: Non-aggregate mineral working

Seeking to concentrate clay extraction in areas where sharp sand and gravel working is currently taking place or has taken place recently, or may take place in the future has the economic advantages of using existing infrastructure as well as a skilled local labour force. It also presents opportunities for co-ordinated large-scale restoration projects which would in the longer term lead to a degree of beneficial effects for the local communities (through recreation and leisure opportunities) as well as for biodiversity. There is also potential for building stone quarrying to have a positive effect by supplying local materials that can be used to repair and maintain historic buildings (SA2b). However, there is still potential for ongoing cumulative negative effects throughout the plan period on transport and the local communities (SA7 and SA8), especially with regard to traffic and amenity issues as a result of the concentration of working clay alongside sharp sand and gravel, unless these adverse effects are appropriately mitigated when new planning permissions are sought. The effects of chalk, building stone, fuller's earth and oil/gas exploration and extraction will be dependent on the location of sites and the distances that materials need to be transported. However, in relation to building stone there is a policy requirement relating to the need to demonstrate that adverse impacts upon the environment and amenity can be avoided, minimised or adequately mitigated.

Clay, chalk, building stone and fuller's earth extraction, plus oil/gas exploration could have positive effects on the local economy.

The strategic resource areas that are identified in policy M3 for the extraction of sharp sand and gravel, and hence could be used for clay extraction under policy M7, have environmental constraints that could result in adverse effects resulting against the objectives for biodiversity (SA1), landscape (SA2a), heritage assets (SA2b) and water (SA4). Extraction of chalk/fuller's earth, along with exploration for oils and gas, could also have an adverse effect on these objectives. Effects will be dependent on the location of sites; however the criteria in policies M4, M10 and the core policies will ensure that these effects are either avoided or mitigated.

7.3.1.10 Policy M8: Safeguarding mineral resources

The policy recognises that in-situ mineral resources should not be sterilised by non-mineral development and that mineral deposits are finite and scarce resources that should be safeguarded for the long term, including unknown future requirements for an increasing population and economic growth. Significant positive effects are therefore likely in the long-term with regards to SA objective 11. Safeguarding proven resources is likely to ensure non mineral development is not prevented unduly. This policy should also support Oxfordshire's economic growth. This policy is also likely to indirectly help to reduce the need to import minerals from elsewhere and could therefore potentially help to reduce adverse effects from transportation (SA7) and reduce greenhouse gas emissions (SA5).

As the policy is safeguarding mineral resources for the future and preventing sterilisation, not permitting extraction in these areas, effects upon SA objectives relating to the environment are likely to be neutral.

7.3.1.11 Policy M9: Safeguarding mineral infrastructure

Policy M9 seeks to safeguard the necessary infrastructure and enables new aggregate rail depots to be developed in suitable locations, reducing the long term cumulative adverse effects on the environment, local communities and local road network experienced by long distance transport of aggregates by road. Significant positive effects have therefore been identified for the transport objective (SA7). Safeguarding and encouraging this type of infrastructure also supports sustainable growth of the Oxfordshire economy and as a result significant positive effects have also been identified for objective SA12 (economic growth) and minor positive effects for SA11 as this will help Oxfordshire to remain self-sufficient in terms of aggregate provision and processing.

Bulk transportation by rail is likely to have positive long term effects on population and health and environmental objectives compared with transportation by road, including a reduction in greenhouse gas emissions and air quality (SA5 and SA4).

7.3.1.12 Policy M10: Restoration of mineral workings

The requirement for timely and phased restoration, to a high standard, to an after-use appropriate to the location and aiming to provide for a net gain in biodiversity should have a positive or significant positive long term effect on many of the SA objectives as it provides an opportunity to create or restore habitats and biodiversity, restore landscape character, improve water and soil quality; and address possible amenity effects on local communities arising from the after-use of minerals sites. It also provides opportunities to develop new local amenity facilities, such as sport and recreational uses which can provide new business opportunities and reduce disparities in access to such facilities for rural communities.

The consideration of opportunities to protect and/or improve geodiversity provides further support to objective SA1, as does the consideration of recreational impacts on SACs. The policy also recognises that mineral working in the flood plain can offer opportunities to increase flood storage capacity and reduce the risk of flooding, having a significant positive effect in the long term for SA6.

Long term management is important however, to maintain long term benefits and this policy supports this by considering how restoration, aftercare and after use of the site is secured in the long term.

7.3.2 Waste Planning Strategy

7.3.2.1 Vision and Objectives

A detailed assessment has not been undertaken on the Waste Planning Vision and Objectives (listed in Section 2.2.2) but instead they have been assessed for their compatibility with the SA objectives. This is detailed in Section 4.6 of this report.

7.3.2.2 Summary of Policy Assessments

Table 7-3 below provides a summary of the assessments carried out for each of the waste planning policies. These are split by duration of effects (short, medium and long term).

Table 7-3: Summary table of assessments of the Waste Planning Policies

Plan Elements (abridged)	Timescale (Short/Medium/Long term)	SA Objectives (abridged)												
		1	2a	2b	3	4	5	6	7	8	9	10	11	12
		Biodiversity & Geodiversity	Landscape	Historic Environment	Water Quality	Air Quality	Greenhouse Gas Emissions	Flood Risk	Transport Effects	Population & Health	Soils	Waste Hierarchy	Self-sufficiency	Economic Growth
Policy W1: Oxfordshire waste to be managed	ST	?	?	?	?	?	+	?	+	?	?	0	++	+
	MT	?	?	?	?	?	+	?	+	?	?	0	++	+
	LT	?	?	?	?	?	+	?	+	?	?	0	++	+
Policy W2: Oxfordshire waste management targets	ST	+/?	+/?	+/?	?	?	+	?	?	+/?	+	+	0	+
	MT	+/?	+/?	+/?	+/?	?	++	?	?	+/?	+	++	0	+
	LT	+/?	+/?	+/?	+/?	?	++	?	?	+/?	+	++	0	+
Policy W3: Provision for waste management capacity	ST	+/?	+/?	+/?	?	?	+/?	?	+/?	?	+/?	+	++	+
	MT	+/?	+/?	+/?	+/?	?	+/?	?	+/?	?	+/?	+	++	+
	LT	+/?	+/?	+/?	+/?	?	+/?	?	+/?	?	+/?	+	++	+
Policy W4: Locations for facilities to manage the principal waste	ST	+/?	+/-/?	?	?	?	+/?	?	+/?	?	?	0	+	+
	MT	+/?	+/-/?	?	?	?	++/?	?	++/?	?	?	0	+	+
	LT	+/?	+/-/?	?	?	?	++/?	?	++/?	?	?	0	+	+
Policy W5: Siting of waste management facilities	ST	0	0	?	?	?	?	?	?	?	+	0	0	+
	MT	+/?	+/?	?	?	?	?	?	?	?	++	0	0	+
	LT	+/?	+/?	?	?	?	?	?	?	?	++	0	0	+
Policy W6: Landfill	ST	+/?	+/?	?	+	?	+/?	0	?	?	+/-	0	++	+
	MT	+/?	+/?	?	+	?	+/?	0	?	?	+/-	0	++	+
	LT	+/?	+/?	?	+	?	+/?	0	?	?	+	0	++	+
Policy W7: Management and disposal of hazardous waste	ST	?	?	?	?	?	?	0	?	?	?	?	+/?	+
	MT	?	?	?	?	?	?	0	?	?	?	?	+/?	+
	LT	?	?	?	?	?	?	0	?	?	?	?	+/?	+
Policy W8: Management of agricultural waste	ST	0	?	?	0	?	0	0	0	?	0	+	0	0
	MT	+	?	?	+/?	?	+	0	+/?	?	+/?	+	0	0
	LT	+	?	?	+/?	?	+	0	+/?	?	+/?	+	0	0
Policy W9: Management and disposal of radioactive waste	ST	0	0	0	0	0	0	0	0	?	0	0	+	0
	MT	0	0	0	0	0	0	0	0	?	0	0	+	+
	LT	0	0	0	0	0	0	0	0	?	0	0	+	+
Policy W10: Management and disposal of waste water/sewage	ST	?	?	?	0	0	0	0	0	0	0	0	0	0
	MT	?	?	?	+	0	0	+	0	+	+	0	0	+
	LT	?	?	?	+	0	0	+	0	+	+	0	0	+
Policy W11: Safeguarding waste management sites	ST	0	0	0	0	0	+	0	+	0	0	+/?	+	0
	MT	0	0	0	0	0	+	0	+	0	0	+/?	+	+
	LT	0	0	0	0	0	+/?	0	+/?	0	0	+/?	+	+/?

7.3.2.3 Policy W1: Oxfordshire waste to be managed

This policy directly supports SA objective 11 on self-sufficiency as it seeks to enable Oxfordshire to be net self-sufficient in the management of its principal waste streams and therefore significant positive effects have been identified.

When assessed against the SA objectives, policy W1 also supports the SA objectives relating to reducing greenhouse gas emissions and minimising the transport effects of transporting waste as making local provision for waste management facilities should reduce the distances travelled. This will also benefit areas outside of Oxfordshire that might otherwise have experienced adverse effects

associated with export of waste from the county. It is also supportive of local economic growth as development of new facilities to deliver the required capacity would create new job opportunities in Oxfordshire. Uncertainty regarding effects upon other environmental objectives will depend upon where the waste provision will be located, however other policies in the Core Strategy, in particular W5 and the core policies, should provide appropriate mitigation to minimise any adverse effects.

7.3.2.4 Policy W2: Oxfordshire waste management targets

Policy W2 sets waste management targets to provide for maximum diversion of waste from landfill. This policy supports SA5 as diverting waste from landfill (especially bio-degradable waste) would reduce the amount of methane associated with landfilling of such waste. It also supports the management of waste in line with the waste hierarchy (SA10) as it sets targets for increased recycling, composting and recovery capacity. Therefore, significant positive effects have been identified against these objectives in the medium and long term.

The policy also requires that all proposals for the management of all types of waste should demonstrate that the waste cannot reasonably be managed through a process that is higher up the waste hierarchy than that proposed. There are likely to be positive effects upon SA12 on supporting the local economy as facilities required to meet the set targets enhance the local economy and offer potential to create local jobs both direct and indirectly.

The targets to significantly reduce the proportions of waste going to landfill will reduce the land-take needed to manage waste, which will have positive implications for the soils objective (SA9) and a reduction in landfill could also have a positive effect on water quality (SA3) in the medium and long term by reducing the risk of groundwater pollution, as well as on population (SA8) if fewer communities are affected by negative effects associated with proximity to landfill sites. There may also be positive implications for the other environmental objectives as a result of a reduction in land-take; however effects will depend upon the location of waste management facilities required to meet these targets and mitigation measures associated with their development and operation. In relation to greenhouse gas emissions from transport, effects will be dependent upon the location of waste management facilities required to meet these targets and the distance between these facilities and locations of waste arisings.

7.3.2.5 Policy W3: Provision for waste management capacity and facilities required

Policy W3 takes a positive approach towards making provision for additional waste management capacity therefore enabling the County to be self-sufficient in its waste management, a significant positive effect has therefore been identified against this objective (SA11).

Effects upon the majority of SA objectives are dependent upon where this provision is located as its focus is ensuring that there is sufficient capacity to deal with Oxfordshire's waste arisings to 2031. This issue is addressed by policies W4, W5 and the core policies and the effects are more likely in the medium to long term when further capacity may be required. However, sufficient sites have been assessed as being potentially deliverable and suitably free of constraints, which will help to avoid new waste management facilities from having adverse environmental effects.

Positive effects are likely on SA10 relating to moving waste up the waste hierarchy (by encouraging new facilities for re-use, recycling and composting of waste and for treatment of food waste) and the proposed capacity is also assessed as having an indirect positive effect on the local economy through the provision of new waste management facilities which are likely to create new job opportunities.

New facilities for re-use, recycling and composting of waste and for treatment of food waste could divert waste from landfill which will help to reduce the levels of methane generated by this type of

waste management, supporting SA5 on greenhouse gas emissions as well as other environmental objectives that would benefit from having reduced landfill, SA1 (biodiversity), SA2a (landscape), SA2b (heritage), SA3 (water) and SA9 (soils). The policy also requires that waste be recovered at one of the nearest appropriate installations which will help to reduce greenhouse gas emissions from waste transportation.

The requirement to restore temporary sites in accordance with policy M10 could result in environmental enhancements which could have positive effects against SA objectives 1 (biodiversity) and 2a (landscape).

7.3.2.6 Policy W4: Locations for facilities to manage the principal waste streams

Allowing development of strategic waste management facilities at the main towns as well as non-strategic waste management facilities at smaller towns would lead to a wide distribution of waste management facilities across Oxfordshire, which would reduce the transportation distance between locations of waste arisings and waste management facilities and a reduction in greenhouse gas emissions associated with such transportation (SA Objectives 5 and 7). As a result significant positive effects have been predicted for both these objectives in the medium and long terms.

Uncertainty has been recorded with regards to SA Objectives 1 (biodiversity), 2a (landscape), 2b (heritage), 3 (water), 4 (air quality), 6 (flood risk), 8 (population) and 9 (soils), as effects on these objectives are largely dependent on the exact locations of future waste management facilities. The policy states that development will not take place within SACs and larger scale (strategic and non-strategic) development will not take place within AONBs, unless the 'major development test' is met, which could result in greater sustainability implications with regards to SA Objectives 1 (biodiversity) and 2a (landscape). The policy may open up more rural areas to the possibility of strategic and non-strategic waste management facilities by allowing provision of these where there is access to the lorry route network. This could lead to negative impacts with regards to landscape, as more rural areas are more likely to be sensitive to such impacts. Alternatively, this could contribute to the rural economy and reduce economic disparities across the county by providing employment and investment in more rural areas (SA Objective 12).

Locating waste management facilities close to the boundary of the county at Banbury and smaller towns, such as Henley-on-Thames and Thame, may avoid waste being transported out of the county, thereby supporting the self-sufficiency objective.

7.3.2.7 Policy W5: Siting of waste management facilities

Policy W5 provides guidance on the siting of waste management facilities. It prioritises land that is already in permanent waste management or industrial use, is previously developed, derelict or underused, involves existing agricultural buildings and their curtilages, active minerals workings, and at waste water treatment works. The use of previously developed or derelict land could lead to the restoration of land which may have been previously contaminated. This would have significant positive effects for SA9 (soils) in the medium and long term.

This policy has the potential for indirect positive effects on protection of nature conservation by prioritising the use of land that is already used for waste or mineral purposes; is previously developed, derelict, or underused; or involves existing agricultural buildings, thereby reducing development of green field land which is likely to host local biodiversity. However it should be noted that previously developed land and derelict land, as well as existing agricultural buildings, can provide important habitats. The likely effects will be dependent upon the implementation of the policy in conjunction with the core policies which are expected to help mitigate adverse effects.

Use of derelict buildings and development of previously developed sites can also help improve the local landscape. The effects will be dependent upon landscape mitigation and therefore the implementation of policy C8 will assist in mitigating any potential negative effects. The supporting text of policy C8 notes that small scale waste management facilities, for local needs, could be acceptable within AONBs, where the development would not compromise the objectives of the designation. It also notes that proposals for waste development within or in close proximity to AONBs will need to be considered against policy C8, which should help to mitigate any adverse effects. Effects on the environmental objectives will be dependent upon development locations, although giving priority to previously developed, derelict or underused land and only allowing facilities on greenfield land if it is the most suitable and sustainable option should help to minimise the impacts on heritage assets, including archaeological sites (SA2b, historic environment).

7.3.2.8 Policy W6: Landfill

Permission will not be granted for new landfill sites for non-hazardous waste and existing non-hazardous landfills may be extended in terms of their life. This is likely to prolong any negative effects on areas affected by existing landfill sites, however it will reduce the potential for adverse effects upon other areas of the County that would otherwise have been affected by new sites.

By making local provision for inert landfilling and non-hazardous landfill capacity and permanent deposit to land of inert waste, policy W6 should have a significant positive effect by allowing for County self-sufficiency with respect to the disposal of waste via landfill and permanent deposit to land of inert waste (SA11). Policy W6 does not support SA objective 10 on moving waste up the hierarchy as landfill does not lead to more waste being recycled or recovered. However, it is recognised that although seen as the option of last resort, landfill must be adequately planned for as it still has a role to play in waste management and permission will only be granted for inert landfilling where material cannot be recycled. Making local provision for inert landfilling has the potential to create local job-opportunities (SA12).

Providing for inert landfill and permanent deposit to land of inert waste especially for restoration purposes is assessed as having positive effects on improving land quality (SA objective 9) and also landscape quality (SA objective 2a), however the potential for existing non-hazardous landfill sites to extend in life may have negative effects on the restoration of sites in the short to medium term. The effects relating to the policy elements on the permanent deposit of inert waste to land are uncertain as they will depend on the scale of the deposits and their location. However the policy does require that such deposits should provide overall environmental benefit, which coupled with the requirements of core policy C8 should help to mitigate any adverse effects against SA2a.

Enabling the provision of facilities to manage leachate will have a positive effect on water quality (SA3) as it will help to reduce the risks of groundwater and watercourse contamination.

The potential transport and climate mitigation effects of the proposed approach are difficult to assess without knowing the location of sites for inert landfilling, although restricting new non-hazardous landfill sites in accordance with Oxfordshire's need is likely to be positive in relation to greenhouse gas emissions, as the amount of methane per annum will decrease. This should be addressed during the planning stage to ensure that sites are located close to sources of waste arisings.

The policy makes provision for waste from other areas to be disposed of in Oxfordshire's landfills. In the longer term declining amounts of waste are expected and this could have a potential positive effect on the levels of greenhouse gas emissions generated by landfills in the County.

The core policies should help to address any potential adverse effects on the built and natural environment.

7.3.2.9 Policy W7: Management and disposal of hazardous waste

Oxfordshire is a net exporter of hazardous waste. The Council acknowledges that the County should be as self-sufficient as is reasonably possible in managing hazardous waste. However, due to the specialist nature of these types of waste management facilities, they currently tend to serve larger catchment areas than a single County. Oxfordshire estimates that additional capacity could be required for approximately 50,000 tpa of hazardous waste produced in the County. Policy W8 does not specifically provide for additional hazardous waste management capacity in Oxfordshire but supports applications designed to meet Oxfordshire's hazardous waste management needs and those that are required to meet a need for waste management that is not adequately provided for elsewhere.

The likely effects upon many of the SA objectives are uncertain as they depend upon the exact location and type of management proposed, however the core policies are expected to ensure the mitigation of significant adverse effects if applications come forward in Oxfordshire. The policy supports self-sufficiency (SA11) and encourages facilities that are designed to deal with hazardous waste arising in Oxfordshire. Making local provision for management and disposal of hazardous waste also has the potential to create local job opportunities, supporting SA12.

7.3.2.10 Policy W8: Management of agricultural waste

By encouraging the treatment of agricultural waste within agricultural units, policy W8 should result in positive effects against the SA objectives for biodiversity (SA1), water (SA3), greenhouse gas emissions (SA5) , transport (SA7), soils (SA9) and waste hierarchy (SA10). However there remains some uncertainty over these effects as they are dependent on the treatment processes and how they differ from the way that the waste is currently managed. Uncertain effects are predicted for landscape (SA2a) and historic environment (SA2b) as effects will be dependent on the type, scale and location of the facilities. There is also uncertainty relating to the effects relating to the air quality (SA4) and population (SA8) objectives – the uncertainty relates to how odour issues could either improve or worsen depending on the type of facility and how the treatment differs from current practices.

7.3.2.11 Policy W9: Management and disposal of radioactive waste

The policy supports SA objective 11 as it would allow Oxfordshire to be self-sufficient in meeting its radioactive waste storage needs. Cleaning up the Harwell site for employment and education purposes (to be part of the Harwell Science and Innovation Campus) also supports SA objective 12 as it supports future jobs in the area and therefore economic growth.

In addition, any proposals would have to be made in accordance with Policy W5 and the core policies, therefore the effects are neutral or uncertain for the majority of the SA objectives.

7.3.2.12 Policy W10: Management and disposal of waste water and sewage sludge

New facilities could have an adverse effect on the SA objectives on biodiversity (SA1), landscape (SA2a) and the historic environment (SA2b); however the effects will be dependent on the location of the facilities. The core policies however should help to mitigate any adverse effects.

Providing new facilities for waste water and sewage sludge could help to maintain and improve ground and surface water quality and soil quality by reducing the likelihood of sewers flooding during extreme weather events and contaminating water sources. This could also have positive effects on communities by reducing risks to health and wellbeing that may result.

New additional capacity for waste water could reduce the risk of flooding, particularly sewer flooding thereby having a positive effect on SA6.

A lack of waste water treatment capacity can act as a block or brake to development. Allowing additional capacity to enable planned development to be taken forward should support economic growth by allowing new developments to go ahead. Positive effects have therefore been identified for SA12.

7.3.2.13 Policy W11: Safeguarding waste management sites

Policy W11 relates to the safeguarding of waste management sites against other forms of development. This policy does not affect most SA objectives as it specifically seeks to ensure that safeguarded sites are not lost to other development. It is however assessed as having a positive indirect effect on enabling Oxfordshire to be self-sufficient in its waste management (SA11). This is because the policy would safeguard all permitted waste sites thus securing safeguarding of greater waste management capacity, which could help to ensure that there are sufficient suitable sites within Oxfordshire for waste management. Safeguarding all permitted temporary waste sites further supports the positive effects identified for SA5, SA7, SA11 and SA12.

As the safeguarded sites do not include landfill, safeguarding may allow greater capacity for facilities further up the waste hierarchy and divert more waste from landfill. As a result a potential positive effect has been identified for SA10 (waste hierarchy).

7.3.3 Core Policies for Minerals and Waste

Summary of Policy Assessments

Table 7-4 below provides a summary of the assessments carried out for each of the core policies for minerals and waste. These are split by duration of effects (short, medium and long term).

Table 7-4: Summary table of assessments of the Core Policies for Minerals and Waste

Plan Elements (abridged)	Timescale (Short/Medium/Long term)	SA Objectives (abridged)												
		1	2a	2b	3	4	5	6	7	8	9	10	11	12
		Biodiversity & Geodiversity	Landscape	Historic Environment	Water Quality	Air Quality	Greenhouse Gas Emissions	Flood Risk	Transport Effects	Population & Health	Soils	Waste Hierarchy	Self-sufficiency	Economic Growth
Policy C1: Sustainable Development	ST	?	?	?	?	?	0	?	0	?	?	?	+	+
	MT	?	?	?	?	?	0	?	0	?	?	?	+	+
	LT	?	?	?	?	?	0	?	0	?	?	?	+	+
Policy C2: Climate Change	ST	+	+	0	0	?	++	+	?	?	0	0	+	+
	MT	+	+	0	0	?	++	+	?	?	0	0	+	+
	LT	+	+	0	0	?	++	+	?	?	0	0	+	+
Policy C3: Flooding	ST	+	0	0	+	0	0	++	0	+	?	0	+	+
	MT	+	0	0	+	0	0	++	0	+	?	0	+	+
	LT	+	0	0	+	0	0	++	0	+	?	0	+	+
Policy C4: Water Environment	ST	+	+	+	++	0	0	+	0	+	+	0	0	+
	MT	+	+	+	++	0	0	+	0	+	+	0	0	+
	LT	+	+	+	++	0	0	+	0	+	+	0	0	+
Policy C5: Local environment, amenity and economy	ST	+	+	+	+	+	0	0	+	++	+	0	0	0
	MT	+	+	+	+	+	0	0	+	++	+	0	0	0
	LT	+	+	+	+	+	0	0	+	++	+	0	0	0
Policy C6: Agricultural land and soils	ST	+	0	0	0	0	0	0	0	0	++	0	0	0
	MT	+	+	0	0	0	0	0	0	0	++	0	0	0
	LT	+	+	0	0	0	0	0	0	0	++	0	0	0
Policy C7: Biodiversity and Geodiversity	ST	++	+	0	+	0	0	+	0	+	+	0	0	0
	MT	++	+	0	+	0	0	+	0	+	+	0	0	0
	LT	++	+	0	+	0	0	+	0	+	+	0	0	0
Policy C8: Landscape	ST	+	++	+	0	0	0	0	0	+	0	0	0	0
	MT	+	++	+	0	0	0	0	0	+	0	0	0	0
	LT	+	++	+	0	0	0	0	0	+	0	0	0	0
Policy C9: Historic environment and archaeology	ST	0	0	++	0	0	0	0	0	+	0	0	0	0
	MT	0	0	++	0	0	0	0	0	+	0	0	0	0
	LT	0	0	++	0	0	0	0	0	+	0	0	0	0
Policy C10: Transport	ST	?	?	?	+	++	++	0	++	++	+	0	+	+
	MT	?	?	?	+	++	++	0	++	++	+	0	+	+
	LT	?	?	?	+	++	++	0	++	++	+	0	+	+
Policy C11: Rights of way	ST	0	0	0	0	0	0	0	+	+	0	0	0	0
	MT	0	0	0	0	0	0	0	+	++	0	0	0	0
	LT	0	0	0	0	0	0	0	+	++	0	0	0	0
Policy C12: Green Belt	ST	0	?	0	0	0	+	0	+	0	0	0	0	0
	MT	0	?	0	0	0	+	0	+	0	0	0	0	0
	LT	0	?	0	0	0	+	0	+	0	0	0	0	0

7.3.3.1 Policy C1: Sustainable Development

Taking a more positive approach to minerals and waste development in Oxfordshire, as required by the policy, has the potential to lead to approvals for minerals and waste development which in the absence of this policy (and paragraph 14 of the NPPF) may otherwise have been rejected on the grounds of sustainability constraints. This could have associated adverse effects (albeit non-

significant effects) on a number of environmental objectives, including those on biodiversity, landscape, water quality, air quality, flooding and soils. Uncertain effects have therefore been identified for these objectives. Taking a more proactive approach could also result in adverse effects on local communities, and similarly uncertain effects have been identified for this objective.

Positive effects have been identified in relation to the objectives SA11 and SA12 as the policy could allow for the development of waste management facilities and minerals workings, beyond those included in the Core Strategy. Any such additional development is likely to result in positive effects on the local economy, and enable Oxfordshire to be self-sufficient in terms of its waste management and contributing to minerals LAA provisions.

7.3.3.2 Policy C2: Climate Change

Significant positive effects have been identified with regards to SA5 as a result of the requirement to adopt a low carbon approach and consider measures to minimise greenhouse gas emissions. It could be that by requiring developments to take a low carbon approach and consider measures to minimise greenhouse gas emissions, the miles driven to transport aggregates and waste products on the road network will be reduced, thereby having a positive effect on SA4 (air quality), SA7 (transportation), SA8 (population and health) and SA9 (land and soil quality), however the effects are considered to be uncertain.

Ensuring that minerals and waste developments take account of climate change over the life of development, including in restoration proposals, could have a positive effect on biodiversity and landscape. For example, by providing habitats that will allow species to adapt to climate change, or by ensuring that any habitats created as part of restoration proposals can cope with or adapt to the changing climate – i.e. to ensure the success of the restoration proposal in the long-term.

This policy supports SA6 by requiring proposals for minerals or waste development, including restoration proposals, to take account of climate change for the lifetime of the development and to provide flexibility for future adaptation to the impacts of climate change. It is assumed that this in part refers to the need to mitigate flooding.

Positive effects have been identified for objectives SA11 and SA12 as requiring that minerals and waste developments take account of climate change over the life of development should help to ensure that they can continue to contribute towards enabling Oxfordshire to be net self-sufficient in its waste management and towards Oxfordshire's aggregate provision figure and can continue to contribute to Oxfordshire's economic growth.

7.3.3.3 Policy C3: Flooding

Policy C3 should have significant positive effects on SA6 (flooding) as it directly supports the objective. The policy should also have a number of indirect positive effects on the SA objectives which relate to the protection of valued habitats, flora and fauna, soil and water quality, local communities and businesses – by preventing damage, disruption and distress caused by flood risk, which might arise if these risks were not appropriately mitigated when new minerals or waste development takes place.

7.3.3.4 Policy C4: Water environment

Significant positive effects have been identified for objective SA3 (water), as the policy directly supports that objective. Policy C4 has an indirect positive effect on many of the SA objectives, as maintaining water quality and quantity is an essential precursor to the proper functioning of

ecosystems, landscapes, and businesses. Positive effects have been identified for SA2b (heritage) in relation to the requirement to demonstrate that there would be no unacceptable adverse impact on or risk to waterlogged archaeological remains. Positive effects have also been identified for SA8 (local communities) due to the link of that objective with water supply and also the recreational value of water resources.

7.3.3.5 Policy C5: Environmental and amenity protection

Policy C5 seeks to protect the environment, residential amenity and other sensitive receptors from unacceptable adverse effects. The 'environment' and 'other sensitive receptors' can be construed to include those SEA elements covered by the SA objectives, including biodiversity, landscape character, historic and built heritage, air, water and people. The policy specifically covers noise, dust, visual intrusion, light pollution, traffic, air quality, odour, vermin, birds, litter, mud on the road, vibration, surface or ground contamination, tip and quarry-slope stability, differential settlement of quarry backfill and subsidence, as well as any cumulative effect from development. Significant positive effects have been identified with regards to SA8 (communities) whilst there are also positive effects for SA7 (transport) as the policy aims to minimise the adverse effects associated with traffic from minerals and waste activities.

7.3.3.6 Policy C6: Agricultural land and soils

Policy C6 is likely to have a significant positive effect upon SA objective 9 (soils) and an indirect positive effect on the objectives SA1 and SA2a, which relate to biodiversity and local landscape character. Effects on other SA objectives are expected to be neutral.

7.3.3.7 Policy C7: Biodiversity and Geodiversity

Policy C7 directly supports SA1 relating to biodiversity and geodiversity and significant positive effects on the objective are therefore predicted. Minor positive effects have been predicted for SA2a, in relation to the link between biodiversity and landscape character and local distinctiveness, whilst indirect positive effects on water quality, flood risk, land and soil quality, and population and health have also been identified due to their interrelationships with biodiversity. The requirement for long term management arrangements to be clearly set out should help to maintain the positive effects in the longer term. Effects on the other SA objectives are expected to be neutral.

7.3.3.8 Policy C8: Landscape

Policy C8 directly supports SA objective 2a 'landscape' and therefore significant positive effects have been predicted for that objective. A minor positive effect on objective SA2b, relating to the historic environment, has also been predicted due to the potential benefits for historic landscapes. An indirect positive effect has been identified on objective SA1 relating to the protection of biodiversity and natural habitats. Positive effects have also been identified with regards to objective SA8 in relation to the benefits to local communities that would result from landscape protection and enhancement. Effects on other SA objectives are expected to be neutral.

7.3.3.9 Policy C9: Historic environment and archaeology

Policy C9 has been assessed as having a significant positive effect on SA objective 2b as it will protect the County's historic environment from inappropriate minerals and waste developments and it also seeks to achieve enhancements to the historic environment wherever possible. The policy also should have indirect positive effects on local communities (SA objective 8). There is no direct

relationship between this policy and the other SA objectives and therefore effects on those objectives are expected to be neutral.

7.3.3.10 Policy C10: Transport

Policy C10 is expected to have a significant positive effect in relation to objectives SA4 (air quality), SA5 (greenhouse gas emissions), SA7 (transport) and SA8 (local communities) associated with reductions in transport impacts, whilst indirect positive effects have been identified for objectives SA3 (water quality) and SA9 (land and soil quality) by addressing the adverse effects on water and soils which can arise through the transportation of minerals causing pollution through runoff. The policy is also expected to have indirect positive effects on self-sufficiency in waste management and sustainable minerals provision (SA11) and economic growth (SA12).

Uncertain effects have been identified with regards to objectives SA1 (biodiversity), SA2a (landscape) and SA2b (heritage) as the installation of alternative infrastructure could have adverse effects - although they will be dependent on the location.

7.3.3.11 Policy C11: Rights of way

Enhancements to the public rights of way network should have a significant positive effect on local communities (SA8) and indirect positive effects on the local road network by encouraging people to make local trips on foot or bicycle, reducing traffic conflicts on local roads (SA7).

The supporting text notes that public access to restored mineral workings should be carefully managed so as to not impact adversely on any sensitive habitats and species in the restored area.

7.3.3.12 Policy C12: Green Belt

Allowing waste management facilities in the Green Belt where there are very special circumstances would reduce the need to transport some of the waste arising from such localities thereby having positive implications for transport effects (SA7) and contributing to a reduction in greenhouse gas emissions (SA5). However, the sites are only likely to be serving local needs and so effects will be minor. Effects on landscape (SA2a) are uncertain as they will depend on the exact locations and the mitigation measures.

7.4 Cumulative effects

Cumulative effects are those effects which, though they may be small in relation to one policy, may combine across a whole plan (or in association with other plans) to produce an overall effect which is more significant. Also considered in this section are synergistic effects, which are those effects where the combined effect is greater than the sum of the individual effects, and secondary (or indirect) effects which are those that are not a direct result of Core Strategy, but occur away from the original effect or as a result of a complex pathway.

In relation to the implementation of the Core Strategy policies, cumulative effects have been examined by SA Objectives (or groups of SA Objectives) as a way of identifying the effects on the receptors that are associated with each of the sustainability topics.

7.4.1 SA1: Biodiversity

Whilst the operation of minerals and waste facilities has the potential to result in some adverse cumulative effects on local biodiversity in the short-medium term, the measures in the core policies,

in particular Core Policy C7 (Biodiversity and geodiversity), along with the restrictions placed by Policy M4 (Sites for working aggregate minerals) and the restoration requirements of Policy M10 (Restoration of mineral workings) provide the potential for cumulative positive effects in the long-term. There is potential for positive synergistic effects for biodiversity and water management if restoration schemes in close proximity to one another are implemented.

7.4.2 SA2a: Landscape

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 core policies along with the restrictions of Policy W4 (Locations for facilities to manage the principal waste streams), the requirements of Policy W5 (Siting of waste facilities) and Policy M4 (Sites for working aggregate minerals) in association with M10 (Restoration of minerals workings) should help to avoid and mitigate these effects. Also, 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. In addition to the consideration given to landscape within specific minerals and waste policies, Core Policy C8 (Landscape) will help to ensure that the landscape is protected and where possible enhanced while Core Policy 12 (Green Belt) will ensure that development only takes place in the Green Belt under 'very special circumstances'.

7.4.3 SA2b: Historic environment

The operation of minerals and waste facilities has the potential to result in some adverse cumulative effects on heritage assets, with some potentially being of a permanent nature (e.g. the loss of archaeological heritage). However criteria within Policy M4 (Sites for working aggregate minerals), Policy C4 (relating to protection of waterlogged archaeological remains) and Core Policy C9 (Historic environment and archaeology) will help to protect the County's historic environment from inappropriate minerals and waste developments. Policy M10 (Restoration of mineral workings) requires restoration of the historic environment, which should result in longer term positive effects. In addition, by seeking to achieve enhancements to the historic environment wherever possible, Policy C9 should help further reduce the overall effects of minerals and waste on the County's heritage assets.

7.4.4 SA3: Water quality

Minerals extraction has the potential to cause adverse effects on surface and ground water resources. Requirements in Policy M4 and Core Policies C3 and C4 will however help to reduce the potential for adverse water quality effects. In the long-term the restoration of mineral sites (Policy M10) could have positive implications for local water quality.

7.4.5 SA4: Air quality

The transportation of minerals and waste by road will inevitably lead to emissions of pollutants from HGVs. However, the distribution of extraction sites and waste management facilities across the county will help to avoid any one particular area being overly-exposed to such emissions. There will also be air quality issues associated with the minerals and waste operations (non-transport emissions related) such as dust created by extraction and vehicle traffic. Core Policies C5 (Local Environment, amenity and economy) and C10 (Transport) will help to reduce the potential for adverse air quality effects.

7.4.6 SA5: Greenhouse gas emissions

Minerals extraction and waste management operations inevitably lead to greenhouse gas emissions (GHG) emissions. The strategic and core policies in Core Strategy, particularly Core Policy C2 (Climate change), should help to limit increases in emissions by distributing aggregate extraction across the county so it can serve local markets; providing a similar approach for waste facilities by locating facilities close to waste arisings; encouraging the use of rail for minerals transportation; reducing the amount of waste going to landfill; and adopting a low carbon approach for new development.

7.4.7 SA6: Flood risk

Minerals extraction operations have the potential to increase local flood risk. This risk should be avoided through the requirements of Core Policy C3 (Flooding). In addition Policy M10 (Restoration of mineral workings) considers the issue of increasing flood storage capacity within restoration schemes. The overall effect on flood risk of implementing the Core Strategy could therefore be positive.

7.4.8 SA7: Transport

The transport of minerals and waste by road will inevitably result in some adverse effects on local communities. The Core Strategy aims to reduce these effects through distribution of extraction sites and waste facilities across the county in order to reduce 'distance travelled'; encouraging a shift from rail and other non-road transport for minerals; and requiring lorry routes to be used. Core Policy C10 (Transport) is specifically aimed at reducing the harmful impacts of transport on the communities in the county and neighbouring areas.

7.4.9 SA8: Population and health

Communities in close proximity to minerals and waste operations, as well as those living on transportation routes are likely to be adversely affected by operations, such as through dust, odour and noise. The distribution of mineral sites and waste facilities across the county should help to prevent any one particular community or group of communities from being disproportionately over-exposed to these adverse effects. The core policies seek to mitigate any adverse effects, particularly Core Policy C5 (Local Environment, amenity and economy), whilst in the medium-long term Policy M10 (Restoration of mineral workings) could provide amenity benefits and countryside access as part of restoration schemes. The reduction of the amount of waste being sent to landfill will also result in benefits to local amenity.

7.4.10 SA9: Soil and land-use

The Core Strategy aims to limit the amount of greenfield land required for new minerals and waste operations by encouraging the use of secondary and recycled aggregate, thereby reducing the need for primary extraction on greenfield sites, and the siting of new waste facilities on previously developed land. The restoration of best and most versatile agricultural land required by Policy M10 (Restoration of mineral workings) directly supports this objective. Core Policy C6 (Agricultural land and soils) provides specific requirements to reduce adverse effects on soils.

7.4.11 SA10: Waste hierarchy and SA11: Self-sufficiency

Key objectives of the Core Strategy are for Oxfordshire to move its waste up the hierarchy and for the county to be as self-sufficient as is possible for waste management and minerals supply. The

strategic waste policies in conjunction with Policy M1 (Recycled and secondary aggregate) in the Core Strategy will help to achieve those objectives.

7.4.12 SA12: Economic growth

The policies within the Core Strategy combine to provide the potential to contribute positively towards Oxfordshire's economic growth. The supply of minerals is a key factor in supporting economic growth, particularly in relation to the provision of new housing and employment developments that are being planned across the county.

7.5 Difficulties encountered in undertaking the assessment

Although a range of local and regional information and studies were available to inform the assessment process, due to the nature of some of the policies some effects were recorded as uncertain.

The main uncertainty relates to the nature of impacts likely to arise as a result of minerals working and waste facilities located within the various areas identified. The strategic nature of the appraisal and the broad nature of the areas make it difficult to predict with certainty the likely impacts of development in these areas. This report has defined the potential effects of development based on currently available information. The eventual impacts will depend for example on the location of specific sites relative to sensitive receptors, the scale of proposed development, the nature and type of operations, and proposed mitigation measures.

The development of the Minerals and Waste Local Plan: Part 2 – Site Allocations Document will enable a more detailed consideration of the effects likely to result from minerals or waste activities and particular locations. This more detailed assessment will have a greater level of certainty than the assessment of the high level strategy and policies in this Local Plan: Part 1 - Core Strategy.

8 SEA/SA influence on the development of the Core Strategy

Post-Examination Hearings update

This section has minor updates to reflect that the SEA/SA has provided input into the updated Core Strategy policies.

8.1 Introduction

A key role of the SEA/SA is to provide recommendations as to how the sustainability performance of a plan can be improved. The Core Strategy includes a range of policies that seek to prevent and where possible enhance the environment and overall sustainability of development. The SEA/SA has built on this by identifying a range of recommendations as to how the Core Strategy and its earlier versions/stages can maximise its performance against the range of sustainability topics. Some of these recommendations seek to mitigate potential adverse effects, whilst others look to build on some of the opportunities that are provided by the County's natural environment.

8.2 SEA/SA stages

To date the SEA/SA has had a range of influences on the development of the Core Strategy. Close liaison between the planning officers and SEA/SA consultants has meant that the SEA/SA has provided input at many stages during the development of the Local Plan (Core Strategy).

When the Core Strategy is adopted it will be accompanied by an SEA/SA Adoption Statement which will need to describe how the Core Strategy has been influenced by the SEA/SA. Influences to date include the following:

- Production of the SEA/SA Scoping Report (and its various revised versions) identified issues that the Core Strategy will need to help address. The information within the Scoping Report will also contribute to the MWLP evidence base;
- Assessment and providing recommendations for additions and changes at the following stages:
    - Spatial Strategy Options for Minerals and Waste (2010)
    - Aggregates Apportionment Options (2011 and 2012)
    - Minerals and Waste Preferred Strategies (2011)
    - Pre Submission Local Plan (2012)
    - Consultation Draft Local Plan (Core Strategy) (2014)
    - Core Strategy Proposed Submission Document (2015)
    - Core Strategy incorporating Proposed Modifications (2017) (this stage)

8.3 Recommendations

The following tables provide details of recommendations to improve Core Strategy that have been identified through the SA process since 2013. It should be noted that other recommendations were made by the previous SA consultants during the assessment of the Pre Submission Local Plan (March 2012) and the draft documents that led up to the production of that Plan.

Table 8-1 outlines recommendations made on an initial version of the Consultation Draft Core Strategy in December 2013 and the actions taken in response. Policy amendments are shown in underlined text.

Table 8-2 outlines the recommendations made during the assessment of the Consultation Draft Core Strategy in January 2014.

Table 8-1: Recommendations made on the initial consultation draft (December 2013)

Policy	Recommendation	Action taken by OCC
M8: Restoration of mineral workings **(Now Policy M10 in the Core Strategy Proposed Submission Document 2015)**	Add a bullet on bird-strike	**Revised policy:** Minerals workings shall be restored to a high standard and in a timely and phased manner to an after-use that is appropriate to the location and aims to provide for a net gain in biodiversity, taking into account: • the characteristics of the site prior to mineral working; • the character of the surrounding landscape; • the amenity of local communities including opportunities to provide for local amenity uses; • the capacity of the local transport network; • flood risk and opportunities for increased flood storage capacity; • bird strike risk and aviation safety; • the conservation and enhancement of biodiversity appropriate to the local area; and • opportunities to protect and/or improve geodiversity. Planning permission will not be granted for mineral working unless satisfactory proposals have been made for the restoration, aftercare and after-use of the site, including where necessary the means of securing them in the longer term.
C5: General environmental and amenity protection	Expand so it is clear to what effects the policy is referring. For example noise, dust, odour, lighting, vibration etc.	**Revised policy:** Proposals for minerals and waste development shall demonstrate that they will not have an unacceptable adverse impact on the environment, residential amenity and other sensitive receptors, including from noise, dust, visual intrusion, light pollution, traffic, air quality, odour, vermin, birds, litter, vibration, tip and quarry-slope stability, differential settlement of quarry backfill, subsidence and the cumulative impact of development.

C7: Biodiversity and Geodiversity	Add reference to internationally protected sites.	**Revised policy:**
		Minerals and waste development should conserve and, where possible, enhance biodiversity.
		Sites and species of international nature conservation importance (e.g. Special Areas of Conservation and European Protected Species) will be given the highest level of protection.
		Development shall ensure that:
		• there is no adverse effect on a Site of Special Scientific Interest, either individually or in combination with other development;
		• irreplaceable habitats, including ancient woodland and aged or veteran tress are not lost or harmed;
		• no damage is caused to sites locally designated for the purposes of nature conservation and/or geological interest, including;
		  ○ Local Nature Reserves;
		  ○ Local Wildlife Sites;
		  ○ Local Geology Sites;
		  ○ Sites of Local Importance for Nature Conservation.
		Development shall avoid harm to protected, priority or notable species and habitats.

	All proposals for mineral working and landfill shall demonstrate how the development will make an appropriate contribution to the maintenance and enhancement of local habitats, biodiversity or geodiversity (including fossil remains and trace fossils), contributing to the objectives of the Conservation Target Areas wherever possible. Satisfactory long-term management arrangements for restored sites shall be clearly set out and included in proposals. These include a commitment to ecological monitoring and remediation (should habitat creation and/or mitigation prove unsuccessful).

Table 8-2: Recommendations made in the assessment of the Consultation Draft Core Strategy (January 2014)

Policy	Related SA Objective	Recommendations
M3: Locations for working aggregate minerals	(7) To minimise the impact of transportation of aggregates and waste products on the local and strategic road network.	Further assessment on access and suitability of roads to accommodate increased HGV traffic is recommended at the site selection stage.
M6: Non-aggregate mineral working **(Now Policy M7 in the Core Strategy Proposed Submission Document 2015)**	(3) To maintain and improve ground and surface water quality.	This policy should follow a similar approach to Policy M4 by including wording relating to the prevention of adverse effects on the Oxford Meadows SAC from the extraction of non-aggregate minerals. [The original recommendation also included Cothill Fen SAC, however this SAC is not affected by non-aggregate mineral extraction.]
M8: Restoration of mineral workings **(Now Policy M10 in the Core Strategy Proposed Submission Document 2015)**	General recommendation	Although it is noted that the supporting text states that in larger workings restoration can commence before working has ended, it is recommended that the policy wording is strengthened at the next planning stage to encourage restoration to start as early as possible on all minerals sites. To further enhance the contribution that restoration can make to improve the local environment, it is recommended that reference be made in policy to encourage restoration schemes to link in to the green infrastructure strategies that are in place at a local authority level.
C4: Water environment	(1) To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species. (3) To maintain and improve ground and surface water quality. (8) To minimise negative impacts of waste management facilities and mineral extraction on people and local communities.	The sustainability of the policy would be improved by replacing the word "unacceptable" with "significant", in order to be consistent with the terminology in the EIA regulations. An "unacceptable adverse effect" has not been defined and this creates a level of ambiguity in the policy.
C5: Environmental and amenity protection	(2) Protect and enhance landscape character, local distinctiveness, conserve and enhance the historic environment, heritage assets and their settings. (3) To maintain and improve ground and surface water quality.	The sustainability of the policy would be improved by replacing the word "unacceptable" with "significant", in order to be consistent with the terminology in the EIA regulations. An "unacceptable adverse effect" has not been defined and this creates a level of ambiguity in the policy.

Policy	Related SA Objective	Recommendations
	(4) To improve and maintain air quality to levels which do not damage natural systems.	
	(8) To minimise negative impacts of waste management facilities and mineral extraction on people and local communities.	
	(9) To protect, improve and where necessary restore land and soil quality.	

Further recommendations were made in relation to policy wording and the supporting text during the assessment of the Proposed Submission Document. Some of these recommendations were taken into account in the preparation of the Proposed Submission Document, whilst other recommendations will be taken into account during the development of the Local Plan Part 2: Site Allocations Document.

In the post-Examination Hearings stage, during the development of the Core Strategy incorporating Main Modifications, additional input to assist in the development of the policies has been provided.

The SEA/SA team worked with Council officers to help identify and develop the reasonable alternatives for particular minerals strategy and waste strategy policies that were then subject to assessment by LUC. The team also contributed to the development of the proposed Main Modifications for both policies and supporting text.

The assessment of alternatives undertaken by LUC in relation to policies M3 (Principal locations for working aggregate minerals), W2 (Oxfordshire waste management targets), W3 (Provision for waste management capacity and facilities required), W4 (Locations for facilities to manage the principal waste streams) and W11 (Safeguarding waste management sites) resulted in recommendations being made as to which alternatives should be taken forward as proposed Main Modifications to the Core Strategy (see Appendix D).

9 Monitoring

Post-Examination Hearings update

This section has been updated to reflect the changes to the significant effects identified in the updated assessments that take account of the proposed Main Modifications – see Appendix F.

9.1 Introduction

The SEA Directive requires that the significant environmental effects of implementing a plan are monitored so that appropriate remedial actions can be taken if required.

The monitoring put in place needs to fulfil the following requirements:

- To monitor the significant effects of the MWLP;
- To monitor any unforeseen effects of the MWLP;
- To ensure that action can be taken to reduce / offset the significant effects of the MWLP; and
- To provide baseline data for the next SEA and to provide a picture of how the environment / sustainability criteria of the area are evolving.

9.2 Approach to monitoring

The SEA Directive (Article 10 (1)) allows for existing monitoring arrangements to be used if appropriate. Monitoring may cover several plans or programmes as long as sufficient information about environmental effects is provided for the individual plans or programmes.

Monitoring measures need not always relate to quantitative indicators, but could include, for example, monitoring to ensure that any Environmental Impact Assessments of major projects incorporate the recommendations made in the SEA.

A range of potential monitoring indicators are described below in Table 9-1 based on the indicators identified in the SA Framework. Indicators identified for monitoring the Core Strategy will also be considered for inclusion in the monitoring framework where appropriate.

The finalised monitoring framework will be documented in the SEA Statement which will be prepared to accompany the adoption of the Core Strategy.

9.3 Monitoring requirements

The monitoring requirements typically associated with the SEA/SA process are recognised as placing heavy demands on authorities with SEA/SA responsibilities. For this reason, it is proposed that the monitoring framework will focus on those aspects of the environment that are likely to be significantly impacted upon, or where the impact is uncertain.

The assessment identified no significant adverse effects. Significant positive effects were identified against the following SA objective versus policy relationships which will need to be monitored:

- SA1 ‘Biodiversity and geodiversity’ in relation to ‘Policy M10: Restoration of minerals workings’ in the long term and ‘Core Policy C7: Biodiversity and geodiversity’ across all timescales (short, medium and long term).

- SA2a 'Landscape' in relation to 'Policy M10: Restoration of minerals workings' in the long term and 'Core Policy C8: Landscape' across all timescales.
- SA2b 'Historic Environment' in relation to 'Policy M10: Restoration of minerals workings' in the long term and 'Core Policy C9: Historic environment and archaeology' across all timescales.
- SA3 'Ground and surface water quality' in relation to 'Policy M10: Restoration of minerals workings' in the long term and 'Core Policy C4: Water environment' across all timescales.
- SA4 'Air quality' in relation to 'Core Policy C10: Transport' across all timescales.
- SA5 'Greenhouse gas emissions' in relation to 'Policy W2: Oxfordshire waste management targets' in the medium and long term, 'Policy W4: Locations for facilities to manage the principal waste streams' in the medium and long term, 'Core Policy C2: Climate change' across all timescales and 'Core Policy C10: Transport' across all timescales.
- SA6 'Flood risk' in relation to 'Policy M10: Restoration of minerals workings' in the long term and 'Core Policy C3: Flooding' across all timescales.
- SA7 'Transport effects' in relation to 'Policy M9: Safeguarding mineral infrastructure' across all timescales, 'Policy W4: Locations for facilities to manage the principal waste streams' in the medium and long term and 'Core Policy C10: Transport', both across all timescales.
- SA8 'Population and health' in relation to 'Policy M10: Restoration of minerals workings' in the long term, 'Core Policy C5: Environmental and amenity protection and C10: Transport across all timescales and 'Core Policy C11: Rights of way' in the medium and long term.
- SA9 'Land and soil quality' in relation to 'Policy M10: Restoration of mineral workings' in the long term, W5: Siting of waste management facilities in the medium and long term and 'Core Policy C6: Agricultural land and soils' across all timescales.
- SA10 'Waste hierarchy' in relation to 'Policy M1: Recycled and secondary aggregate' and 'Policy W2: Oxfordshire waste management targets', both in the medium and long term.
- SA11 'Self-sufficiency' in relation to 'Policy M2: Provision for working aggregate minerals' in the medium and long term, 'Policy M8: Safeguarding minerals resources' in the long term, and 'Policy W1: Oxfordshire waste to be managed', 'Policy W3: Provision for waste management capacity' and 'Policy W6: Landfill' all across the short, medium and long term.
- SA12 'Economic growth' in relation to 'Policy M9: Safeguarding mineral infrastructure' in the medium and long term.

Potential monitoring indicators for each of the SA objectives based on those included in the SA Framework in the Scoping Report, the Minerals and Waste Annual Monitoring Report 2015 and the proposed Monitoring Framework in the proposed Main Modifications are provided in Table 9-1.

Table 9-1: Proposed monitoring indicators

	SA Objective	Potential Indicators
1	To protect, maintain, and enhance Oxfordshire's biodiversity and geological diversity including natural habitats, flora and fauna and protected species	Number/percentage of permitted applications for minerals and waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Habitats Plans for the creation of calcareous grasslands, lowland acid grassland and reedbeds. Number/percentage of planning applications which have an impact on designated sites or BAP habitats. Number/percentage of permitted applications which result in restoration of favourable recovering condition or buffering of designated areas through appropriate habitat creation. Number/percentage of permitted applications for minerals and waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Species Plans. Contribution of the Local Plan policies to Conservation Target Areas for restoration of minerals and waste management sites. Number/percentage of permitted applications which include conditions for the protection or enhancement of Local Geology Sites or geological SSSIs. Proportion gain of biodiversity in restoration schemes
2a	Protect and enhance landscape character and local distinctiveness	Minerals and waste development where the anticipated residual landscape impact is neutral or positive. Number/percentage of permitted applications for minerals and waste development which include conditions for the protection or restoration of statutory or non-statutory landscape designations.
2b	Conserve and enhance the historic environment, heritage assets and their settings	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 characterisation type(s) which have been altered and their character eroded.
3	To maintain and improve ground and surface water quality	Number of permitted applications affecting source protection zones 2 and 3. Number of permitted applications which assess the risk of contamination of groundwater. Number of sites within 50m of a watercourse. Number of permitted applications requiring abstraction licences.
4	To improve and maintain air quality to levels which do not damage natural systems	Number of permitted applications with routeing agreements which avoid AQMAs. Survey of trip generation to civic amenity sites. Number of complaints relating to dust/odours.
5	To reduce greenhouse gas emissions to reduce the cause of climate change	Proportion of waste and aggregates transported by rail or water. Quantity of biodegradable wastes landfilled.
6	To reduce the risk of flooding	Number of permitted sites for minerals and waste development within the flood plain (flood zone 3a). Number of sites that are permitted within flood risk zone as identified by the NPPF and Technical Guidance to NPPF. Number of proposals approved against the recommendation of EA advice. Number of mineral restoration schemes identified for flood attenuation.

	SA Objective	Potential Indicators
7	To minimise the impact of transportation of aggregates and waste products on the local and strategic road network	Distances travelled by road from new applications to settlements (waste) or markets. Number of sites with rail/water access. Number of sites with suitable access to appropriate roads. Average distances travelled to waste recycling sites.
8	To minimise negative impacts of waste management facilities and mineral extraction on people and local communities	Number of permitted applications for mineral or waste development within 250m of sensitive receptors (settlements). Number of sites for mineral or waste development within 250m of sensitive receptors (settlements). Number of noise complaints relating to minerals and waste processing and transportation. Number of permitted applications with restoration conditions which enhance local amenity and /or improve access to the countryside. Number of approved mineral restoration schemes.
9	To protect, improve and where necessary restore land and soil quality	Area of high grade agricultural land lost to minerals and waste development. Incidences of land contamination related to minerals and waste development.
10	To contribute towards moving up the waste hierarchy in Oxfordshire	Permissions granted for secondary and recycled aggregates supply. Capacity of secondary and recycled aggregate supply facilities. Actual or estimated annual percentages of municipal, commercial & industrial and construction, demolition & excavation wastes composted, recycled, treated and landfilled. Existing and permitted waste management capacity for composting, recycling and residual treatment of municipal, commercial & industrial and construction, demolition & excavation wastes relative to actual or estimated amounts of wastes to be managed. Amounts of waste recycled and recovered.
11	To enable Oxfordshire to be self-sufficient in its waste management and to provide for its local need for aggregates as set out in the LAA	Number of permitted applications for waste management to meet targets to achieve net waste self-sufficiency. Number of permitted applications which contribute to meeting LAA provision. Number and area of applications granted for non-minerals development in mineral consultation areas, which sterilise mineral resources. Number and area of site allocations made by District Planning Authorities for non-minerals development in mineral consultation areas, which sterilise mineral resources
12	To support Oxfordshire's economic growth and reduce disparities across the county	Number of direct jobs created in the waste/mineral sector per year. Number of new mineral and waste permissions. Number of minerals sites with rail access. Number of applications for new rail aggregate depots. Number of permitted aggregates rail depots in Oxfordshire. Number and type of safeguarded mineral infrastructure sites in Oxfordshire. Number of safeguarded aggregate rail depots in Oxfordshire.

The final monitoring plan will be published in the SEA/SA Statement, alongside the adopted Core Strategy. The SEA/SA monitoring will be published as part of the Annual Minerals and Waste Monitoring Report which will be the responsibility of Oxfordshire County Council.

10 Next steps

Post-Examination Hearings update

This section has been updated to reflect the new stage of plan-making.

10.1 Consultation on the SA Report Update

The SEA Regulations set specific requirements for consultation with the Statutory Environmental Bodies, the public and other stakeholders. This SA Report Update will be published for consultation alongside the Proposed Main Modifications to the Core Strategy and will be made available to all interested parties so that they are able to respond.

Copies of the SA Report Update documents can be found on the Council's website:

https://www.oxfordshire.gov.uk/cms/public-site/minerals-and-waste-policy.

Comments on the SA Report Update should be sent in writing to:

By email: mineralsandwasteplanconsultation@oxfordshire.gov.uk

By post: Minerals & Waste Core Strategy Consultation
Environment & Economy
Planning Regulation (Minerals & Waste)
Oxfordshire County Council
County Hall
New Road
Oxford
OX1 1ND

The closing date for responses is **20th March 2017**.

All comments received will be publicly available.

10.2 SEA/SA Adoption Statement

When the Local Plan: Part 1 - Core Strategy is adopted it will be accompanied by a SEA/SA Statement.

In line with the SEA Regulations, the SEA/SA Statement will provide the following information:

- How environmental considerations have been integrated into the plan;
- How the SA Report has been taken into account;
- How opinions expressed in relation to the consultations on the plan/ programme and SA Report have been taken into account;
- The reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and
- The measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme.

10.3 Post Adoption

Following the adoption of the Local Plan: Part 1 - Core Strategy there will be a need to undertake monitoring of the significant effects that have been identified in this SA Report Update. It is envisaged that this monitoring will take place alongside the monitoring of the MWLP itself and be published as part of the Annual Monitoring Report for Minerals and Waste which will be the responsibility of Oxfordshire County Council.