URS

Scott Wilson

# Oxfordshire Minerals and Waste Core Strategy

## Sustainability Appraisal/Strategic Environmental Assessment

Draft Waste Planning Strategy
September 2011

# Revision Schedule

**Draft Waste Planning Strategy SA/SEA**
September 2011

| Rev | Date | Details | Prepared by | Reviewed by | Approved by |
|---|---|---|---|---|---|
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# Executive Summary

The Council is preparing a Minerals and Waste Development Framework (MWDF) for Oxfordshire. The Minerals and Waste Core Strategy Development Plan Document (MWDPD) will form a key part of the MWDF and will provide a strategic vision and overall strategy for meeting known and anticipated minerals and waste development requirements in Oxfordshire for the period to 2030. The Council has developed a draft Waste Planning Strategy to inform the preparation of the Core Strategy. The draft Waste Planning Strategy has been subject to Strategic Environmental Assessment (SEA) and Sustainability Appraisal (SA).

SEA involves the systematic identification and evaluation of the environmental impacts of plans and programmes and stems from the EU SEA Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment. SA broadens the concept of SEA to encompass economic and social impacts and is required under the Planning and Compulsory Purchase Act 2004. Government guidance requires that all Development Plan Documents (DPDs) are subject to both SEA and SA.

Throughout this report, where reference is made to Sustainability Appraisal, it should be taken to include the requirements of the SEA Directive. This SA has involved the appraisal of the emerging waste planning vision, objectives and policies against the SA objectives in order to assess their potential sustainability impacts.

The proposed **vision and objectives** address all of the sustainability objectives and can help Oxfordshire achieve sustainable waste management.

## Strategic Policies

Strategic policies W1 (amount of waste to be provided for), W3 (waste management targets), W4 (additional waste management capacity) all seek to ensure that sufficient capacity is delivered to manage the amount of waste arising in Oxfordshire. These policies are in line with sustainability and can enable self sufficiency. They are also in keeping with the waste hierarchy.

Policy W2 provides for disposal of a declining amount of waste from London and elsewhere at existing landfill sites in Oxfordshire. This policy is not in line with the waste hierarchy and the principle of managing waste close to where it arises. However, the policy seeks to reduce these negative impacts by restricting disposal to a reducing amount over time. Delivery of recycling and treatment capacity in London and elsewhere will be critical in the short to medium term to ensure this policy does not lead to detrimental impacts in the long-term.

Policy W5 outlines the provision for different types of waste management facilities in Oxfordshire. The policy responds to the Council's Waste Needs Assessments and makes provision in line with the identified needs. The proposals aim at locating facilities as close as possible to sources of waste arising and this is the case for MSW residual waste transfer stations, C&I recycling and C&D recycling. For C&I residual treatment facilities some potential negative transport impacts are identified due to the need to move materials from the west of the county to the single large facility proposed in the south. Mitigation measures against the identified impacts will need to be considered during Site Selection and at the planning application stages.

Policy W6 provides guidance on sites for waste management facilities. The criteria adopted can help deliver sites that make best use of available land resources. Proposals for small scale sites in the AONB will need to ensure that such proposals are in keeping with the designation's objectives. Proposals to locate facilities to serve Oxford's needs within the Green Belt will need to be balanced between the need to manage waste close to where it arises and the potential negative impacts on the local landscape. Ways to minimise potential negative effects should be considered during Site Selection and at the planning application stage.

Policy W7 provides for inert landfill for restoration of land. This can have beneficial impacts in restoring land quality. The policy restricts permitting of landfill for non-inert waste which will help divert this waste stream from landfill. Overall, although landfill is considered to be the option of last resort, it currently has a role to play in the management of waste. However, this role is expected to diminish as new recycling and treatment facilities are delivered and landfill is restricted to residual non-hazardous and for restoration purposes.

Oxfordshire is a net exporter of hazardous waste and Policy W8 and its supporting text acknowledge that due to the specialist nature of hazardous waste management facilities (they currently tend to serve large catchment areas than a single county) exporting of some hazardous waste for management elsewhere will continue to form part of the strategy for managing hazardous waste arising in Oxfordshire. Exporting hazardous waste for management elsewhere was assessed as likely to have negative transport impacts. These impacts were judged be minor due to the relatively small quantities of waste involved. The policy supports self-sufficiency as is reasonably possible and it has the potential to increase the amount of hazardous waste managed in-county.

Policy W9 relates to the management of radioactive waste (intermediate and low level radioactive waste). For intermediate level radioactive waste, the policy proposes storage at Harwell for waste arising from both Harwell and Culham. Some potential negative transport impacts are identified although these are judged to be minor due to the short distance travelled and the small quantities of waste expected to be moved. For low level radioactive waste, Policy W9 proposes temporary storage at both Harwell and Culham, allowing for final disposal at existing landfills or a bespoke facility at Harwell if no other means of disposal is available. Storage at source of arising would lead to minimal movement of materials between the sites and therefore no potential negative transport impacts have been identified. The potential impacts of the final disposal route will depend on the preferred option and will need to be considered in detail at the planning application stage when the potential disposal sites are identified.

The SA identifies some environmental issues to be considered at the planning application stage for both Harwell and Culham sites to mitigate against potential adverse impacts.

Policy W10 on safeguarding seeks to ensure that sites are not lost to other developments. This policy supports self sufficiency by providing local site alternatives to potential developers within the county indirectly leading to waste being managed close to where it arises and mitigating against potential negative transport impacts. Overall, the strategic waste planning policies are considered to be supportive of sustainable development principles subject to the identified mitigation measures.

## Common Core Policies

All of the Common Core Policies (C1 – C8) were found to be broadly in line with the SA objectives. Cross- referencing to supporting text and or other Core Policies can in some cases further enhance the performance of these policies against sustainability objectives.

The sustainability of Policy C1: Flooding in relation to SA objective 6 could be improved by reference to the future predicted impacts of climate change and the incorporation of adaptation measures to account for this, including any likely increased flood risk.

# 1 Introduction

## 1.1 Oxfordshire Minerals and Waste Development Framework

Oxfordshire County Council ('the Council') is preparing a Minerals and Waste Development Framework (MWDF) for Oxfordshire. The Minerals and Waste Core Strategy Development Plan Document (MWDPD) will form a key part of the MWDF and will provide a strategic vision and overall strategy for meeting known and anticipated minerals and waste development requirements in Oxfordshire for the period to 2030.

## 1.2 Waste Planning Strategy

In order to effectively manage the waste produced in Oxfordshire, the Council has prepared a draft Waste Planning Strategy as part of the development of the Minerals and Waste Core Strategy DPD. The draft strategy makes planning provision for the facilities that will be required to manage Oxfordshire's waste over the plan period.

The draft strategy sets out how much additional capacity for different types of waste management is required over the plan period and how, where and when it should be provided, including a clear framework for the identification of suitable sites for waste management facilities. The Council is consulting on the draft Waste Planning Strategy as part of the preferred Minerals and Waste Core Strategy consultation). Details of this consultation and how to get involved are available from the Council's website: www.oxfordshire.gov.uk

**Minerals and Waste Core Strategy DPD timetable**

Regulation 27 (proposed submission) – 2012
Regulation 30 (submission) – 2012
Pre examination – 2012
Examination in Public – 2012
Adoption – 2013

## 1.3 Background to Appraisal

URS/Scott Wilson was commissioned by the Council to undertake an independent Sustainability Appraisal incorporating Strategic Environmental Assessment[1] (hereby referred to as SA) of the draft Waste Planning Strategy in August 2011. This report documents the findings of the SA of the draft Waste Planning Strategy.

## 1.4 Sustainability Appraisal

DPDs are required to be subjected to the formal process of Sustainability Appraisal (SA). The purpose of SA is to ensure that social, environmental and economic considerations are made during the preparation of policies and plans. By taking account of these factors during the preparation of the Core Strategy DPD the aim is that the resulting planning decisions which emerge following the implementation of the DPD policies will be in keeping with the principles of sustainable development.

SA is a five-stage process as outlined below:

[1] As required through the Strategic Environmental Assessment Directive (2001/42/EC).

- Stage A – Setting the context, establishing the baseline and defining SA Objectives (Scoping).
- Stage B – Predicting and assessing the effects of the implementation of the DPD.
- Stage C – Documenting the findings of the Appraisal in the SA report.
- Stage D – Consulting on the DPD and SA report.
- Stage E – Monitoring the implementation of the DPD.

Stage A involves gathering the evidence base and defining SA Objectives. The findings of this stage are documented in a Scoping report. A Scoping report for the Oxfordshire MWDF was prepared in August 2005 and was updated in July 2009 and May 2011. It can be found on the Council's website www.oxfordshire.gov.uk.

The appraisal is conducted at Stage B and outcomes recorded in the SA report during Stage C. Following statutory consultation (Stage D) the SA report may require updating to reflect changes made in response to representations. Stage E concerns the ongoing monitoring of significant effects of the implementation of the DPD.

## 1.5 Compliance with SEA Directive

The SEA Directive sets out a legal assessment process that must be followed. This report clearly sets out the relevant requirements of the SEA Directive and the table below provides an indication of where the information required for inclusion in the 'Environmental Report' (SA Report) can be found.

***Table 1.2 Compliance with SEA Directive***

| Environmental Report requirements[2] | Where covered |
|---|---|
| An outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes; | Scoping Report (2011) and Chapter 2 of this Report |
| The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme; | Scoping Report (2011) |
| The environmental characteristics of areas likely to be significantly affected; | Scoping Report (2011) and Chapter 4 of this Report |
| 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 79/409/EEC and 92/43/EEC; | Scoping Report (2011) and Chapter 2 of this Report |
| The environmental protection objectives, established at international, Community or Member State 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; | Scoping Report (2011), Appendix 2 |
| The likely significant effects[3] on the environment, | Chapter 4 and Appendix A |

[2] As listed in Annex I of the SEA Directive (Directive 2001/42/EC on the assessment of the effects of certain plans and programmes 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, landscape and the interrelationship between the above factors; | of this Report |
| 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; | Chapter 4 and Appendix A of this Report. |
| 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; | SA of Waste Spatial Options (August 2011) and Chapters 3 – 4 of this Report. |
| A description of the measures envisaged concerning monitoring in accordance with Article 10. | Chapter 5 of this Report |
| A non-technical summary | See separate NTS. |

## 1.6 This Report

This report is the SA Report of the draft Waste Planning Strategy. It should be read in conjunction with the MWDF Scoping Report (May 2011) as the Scoping Report sets the context within which the appraisal has been undertaken. The SA Report on Waste Spatial Options (August 2011) provides details on the SA findings of the options considered previously. This report is available from the Council.

[3] These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects.

# 2 Sustainability Context, Baseline and Objectives

## 2.1 Introduction

This chapter, in compliance with the SEA Directive, sets the context of the appraisal and provides the details of the current state of the environment as identified in the Oxfordshire MWDF Scoping Report[4]. It also identifies the key issues and problems that the Waste Planning Strategy and SA should respond to as well as the SA objectives that are used to appraise the waste policies in the Waste Planning Strategy.

## 2.2 Policy Context

The SEA Directive requires the Environmental Report (SA Report) to provide information on the relationship of the DPD with other relevant plans and programmes. During the Scoping stage, policies, plans and programmes that were considered to influence or affect the Oxfordshire MWDF were reviewed. The purpose of this review was to identify the implications of the objectives of these policies, plans and programmes on the MWDF as well as implications for the SA.

The full list of the Plans and Programmes reviewed during the Scoping Stage can be found in Appendix 1 of the Scoping Report.

A number of key messages that should be taken into account in developing the Oxfordshire MWDF have been identified following the context review. Those relevant to the MCS are listed below. These messages are intended as guidance for the MCS and the SA to inform the decision making process. The list of messages in not necessarily exhaustive and no priority should be inferred from the ordering:

- 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, regionally and locally designated conservation sites, including SACs, SSSIs, NNRs, Local Wildlife Sites as well as BAP Priority Species and Habitats and nationally and regionally 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 from mineral working 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, and 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.
- The need to ensure a steady supply of mineral materials for local markets, to meet the demand generated by planned and existing development

[4] Oxfordshire MWDF Scoping Report, Revised May 2011.

identified in each of the four District Council's plans, and the City Council's plans, and for markets identified outside the county.

- The need to maintain a land bank of permitted reserves for aggregate minerals in line with national and regional guidance.
- Waste management policies should support sustainable waste management measures to encourage a reduction in the amount of waste arisings going to landfill in Oxfordshire. The need to provide waste management facilities to allow the county to be self-sufficient in its treatment and/or disposal of its waste arisings, and to dispose of its apportionment of London's waste arisings 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.

## 2.3 Baseline Review

### 2.3.1 Introduction

The collection of baseline information is a key component of the SA process and a legal requirement under the SEA Directive.

Baseline information helps to provide a basis for predicting and monitoring effects and to identify sustainability issues for the SA to consider. When collecting baseline data, the aim is to assemble sufficient data on the current and likely future state of the area to enable the DPDs' effects to be adequately predicted. The sections that follow present a summary of key baseline data. More detailed information on the baseline conditions can be found in the MWDF Scoping Report (May 2011).

### 2.3.2 Demographic Profile

Oxfordshire has a population of around 635,500[5] and is predominantly a rural county; it is the least densely populated county in the South East of England.

Despite this, Oxfordshire has seen a strong rate of population growth in recent years (10.7% between 1995 and 2005) and significant growth in older age ranges (in the same period, the number of residents aged between 75 and 84 increased by 11.4%, and aged between 85 and 89 by 35.5%).

The population is expected to increase by 11.4% between 2006 and 2026, above the expected average growth for both England (10.1%) and the South East (10.1%) with growth expected in urban areas such as Oxford, Didcot, Bicester, Wantage, Grove and Witney. Oxfordshire receives a significant number of economic migrants. Oxford City has the second highest proportion of people born outside the UK in the South East and a total of 7,645 people from countries that joined the European Union in 2004 (accession countries) registered for work in Oxfordshire between May 2004 and March 2007 (10% of the total for the South East region). The proportion of non-white people in Oxfordshire is broadly equal with the rest of the South East (4.9%). Overall life expectancy is similar to the national average, although there are variations between Districts. Overall deprivation is low, although there are some more highly deprived areas, such as some wards within Oxford city and in Banbury.

[5] 2007 Mid-year population estimates published by ONS, August 2008, http://www.statistics.gov.uk/popest

### 2.3.3 Environmental Profile

Oxfordshire has a high environmental quality and environmental assets including areas of national importance designated for nature and landscape conservation. These include many European, nationally and locally designated sites as follows: 6 Special Areas of Conservation, 112 Sites of Special Scientific Interest (SSSIs), 4 National Nature Reserves, 17 Local Nature Reserves, 343 County Wildlife sites and 106 proposed sites.

The county is home to 67 of the UK BAP priority species and examples of 16 of the priority habitats identified in the UK BAP as being of international or national importance for biodiversity can be found in Oxfordshire. The Biodiversity Action Plan for Oxfordshire[6] currently contains Action Plans for 18 habitats and 21 species, including for lowland calcareous grassland, acid lowland meadow and reedbeds, which are the habitats most likely to be created through mineral restoration. Thirty six Conservation Target Areas have been identified in the county. The aim of these areas is to ensure that existing habitats are protected and maintained in good condition and at the same time expansion of areas of biodiversity value and linkage between these areas is encouraged, to provide more viable and sustainable biodiversity management units.

78% of the land in the county is under agricultural management (260,800ha). Important landscapes include the Chiltern Beechwoods, the limestone grasslands of the Cotswolds and the lowland meadows of the Thames valley. Three designated Areas of Outstanding Natural Beauty (AONB) together cover 24% of Oxfordshire and cover parts of the Chilterns, the Cotswolds and the North Wessex Downs. Much of the central part of the county around Oxford is designated as Green Belt.

Oxfordshire has nearly 13,000 Listed Buildings and structures, 2 registered battlefields, 55 Registered Parks and Gardens and 242 Conservation Areas. Blenheim Palace and Park is designated as a world heritage site, which reflects its outstanding international importance. Many of the Conservation Areas are villages which lie in close proximity to existing or planned mineral working. Eynsham, Ducklington, Nuneham Courtenay, Hatford and Shellingford are in existing working areas and Dorchester, Bampton, Benson and Stanton Harcourt & Sutton are in proposed new working areas.

There are approximately 350 Scheduled Ancient Monuments and many scheduled and non-scheduled archaeological sites along the Thames valley. Some areas have experienced mineral working in the past which has had significant effects on archaeological sites, particularly the Lower Windrush Valley, the Lower Evenlode valley and in the Radley area.

[6] Further details can be found on the ONCF website http://www.oncf.org.uk/biodiversity/biod_oxonbap.htm

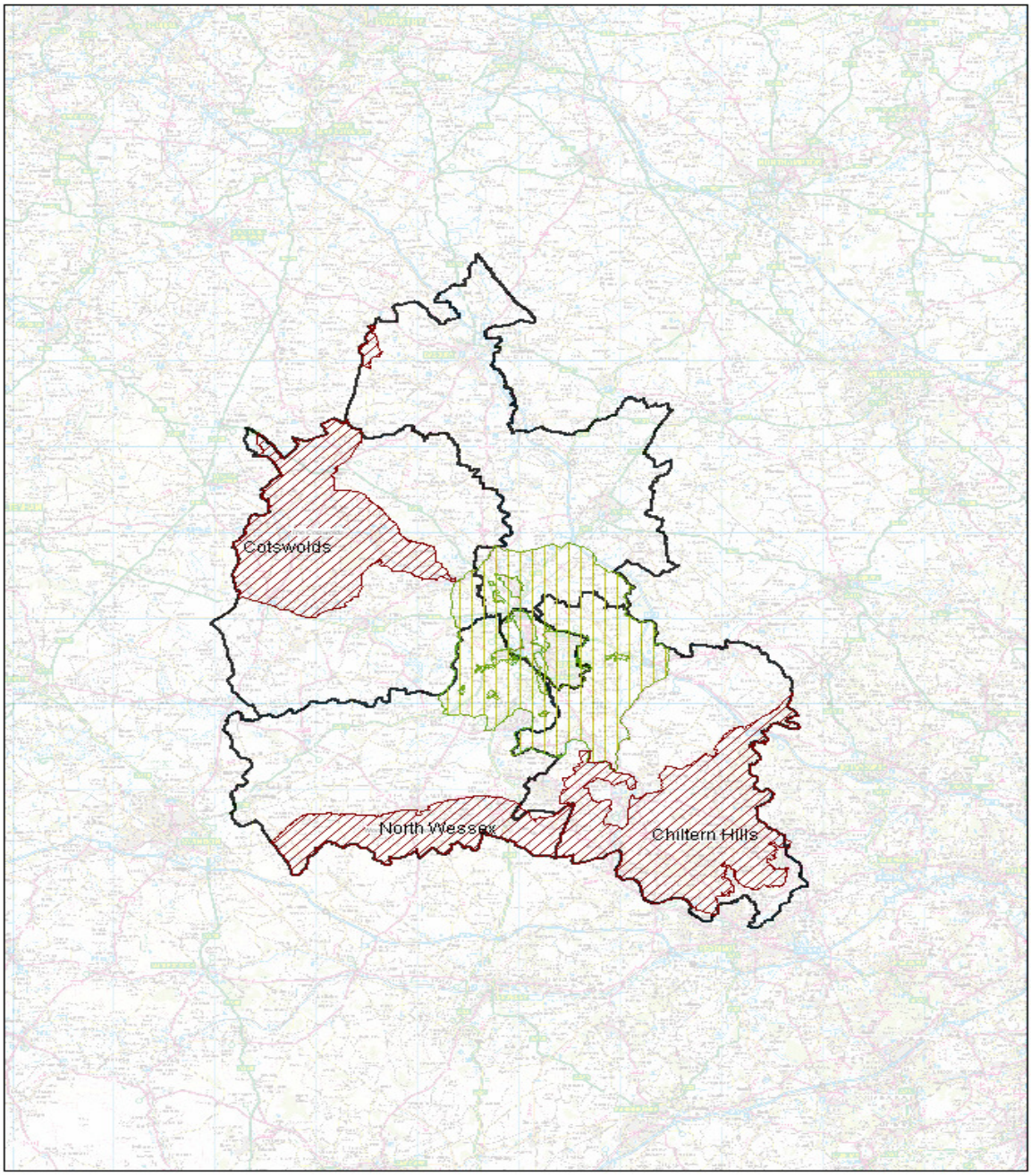




***Figure 2.1 Areas of Outstanding Natural Beauty (AONB) and Green Belt in Oxfordshire***

The River Thames is the second longest river in Great Britain and provides the backbone of one of the most intensively used water resource systems in the world, taking advantage of the use and subsequent return of highly treated wastewater and the natural purification capacity of the river. Water resources of the river, together with associated groundwater, support significant abstractions for public water supply and to a lesser extent for industry and agriculture.

The River Thames is also one of the most important environmental features of the county and provides a diverse range of habitats, including a vital corridor for migration. These habitats all have their own particular flow and level requirements that need to be protected. The Thames is also highly valued for its navigational and recreational uses, which also have their own flow and level requirements. Tributaries of the Thames which flow through Oxfordshire include the Rivers Cherwell, Ock, Thame, Evenlode, Windrush and Ray. Chemical and biological river quality varies considerably across the county.

Despite the resource that the river provides, the Thames Water region is one of the driest in the country and the Environment Agency has classified the majority of the water catchment areas within Oxfordshire as 'no water available', 'over-licensed' or 'over-abstracted'.

Oxfordshire is particularly vulnerable to flooding along several of its river valleys, including the Thames valley and the Evenlode. Approximately 3,500 properties located throughout the Oxford floodplain are at risk including areas within Osney, Botley, South Hinskey, North Hinksey and Wolvercote[7]. Climate change in Oxfordshire is likely to result in warmer, drier summers, and milder, wetter winters with an increased risk of flooding8.

Households in Oxfordshire emitted between 2.1 and 3.4 tonnes of carbon dioxide (CO2) per person during 2004, above the UK and SE averages for all districts except Oxford City. In 2004 domestic sources accounted for 25% of the county's total CO2 emissions and road transport for 33%. Traffic and associated congestion continues to increase in Oxfordshire which will have implications for county emissions of CO2. In the twenty years from 1981 to 2001, the total number of cars owned by Oxfordshire households increased at a rate more than double the growth of households (78% versus 35%). The district with the highest ratio of cars per household is South Oxfordshire with 1.45, highlighting the car dependency of rural households.

Seven Air Quality Management Areas have been designated in the county, primarily due to road traffic emissions. The AQMAs include some streets in the central area in Oxford City, Green Road roundabout in Oxford, central Henley on Thames, Horsefair in Chipping Norton, and the main streets in the centre of Abingdon, Witney and Wallingford. With the exception of these areas, air quality in Oxfordshire is good. Weather conditions associated with episodes of poor air quality in summer are likely to become more frequent as a result of climate change.

Oxford has good rail accessibility, on the Reading to Birmingham line, cross country from London to Worcester and with a branch line to Bicester. Didcot lies on the inter-city line from London to Bristol and S Wales and East Oxfordshire has good accessibility to the Chiltern line, which passes through Bicester on the Birmingham-London Marylebone line. West Oxfordshire has generally poor accessibility to rail travel, apart from the Worcester line.

[7] http://www.environment-agency.gov.uk/regions/thames/323150/335688/1113336/?lang=_e, accessed 22nd August 2008.
[8] Oxfordshire's Sustainable Community Strategy: Briefing Paper 6: Environment (August 2007).

The proportion of travel by public transport to the central area of Oxford is high (33%) but travel by public transport to the rest of Oxford is much lower (11%). Public transport provision for travel from rural Oxfordshire to Oxford is a significant part of the county's emerging transport strategy.

Transportation of both minerals and waste is an issue for Oxfordshire, given its rural character. The most common means of transportation of aggregate and of bulk movement of waste is by Heavy Goods Vehicle (HGV), which has implications for road safety, air pollution, noise and road congestion. There are a number of rail depots which handle aggregate; Hinksey sidings - Oxford, Oxford Road - Kidlington, Appleford Sidings - Sutton Courtenay and Hennef Way - Banbury.

### 2.3.4 Economic Profile

Oxfordshire has one of the strongest economies in the South East and is globally competitive in areas such as high performance engineering, bioscience, medical instruments and publishing. The Oxfordshire economy is relatively self-contained with the majority of its workforce (around 85%) resident in the County. Oxford is the principal employment centre, but there is significant economic activity centred on Banbury, and potential to expand the level of economic activity centred on Wantage and Didcot. Economic activity in the County is characterised by micro businesses, and small and medium enterprises - 95% of Oxfordshire enterprises employ fewer than 20 people.

Economic forecasts indicate an increase in jobs in the county of between 51,200 to 75,400 between 2001 and 2026 (Draft South East Plan 2005). Of the total workforce of around 309,000 people, 206,000 are employed in urban areas with the most significant concentration being 85,700 in Oxford City. Almost exactly 100,000 people are employed in Oxfordshire's rural areas (i.e. in settlements of less than 10,000 people – this includes Harwell Science and Innovation Campus, Milton Park and other rural business parks). 23% of employees in rural areas are home based compared with 11% in urban areas. Workplace-based earnings for full-time workers in Oxfordshire averaged £543 in 2006, 1% below the English average (£547) and 4% below the South East average (£567)[9].

With 85,700 people or 28% of the county's employment, Oxford is the centre of a city-region that attracts business activity and inward investment as well as inward commuting from across the county. Concentrated pockets of multiple deprivation are found in urban centres – in general, the larger the centre, the larger the pocket of deprivation. Severe pockets of deprivation and under-performance affect about 15% of people in Oxford and Banbury and all districts have at least one area in the most deprived 20% on the education and skills domain. In rural areas, there is widespread deprivation in the form of poor access to services.

Despite Oxfordshire's overall prosperity and strong economic performance, there are concerns about global competitiveness, particularly in the high-tech sector. Market towns are struggling to maintain their viability as service and retail centres in the face of competition from larger retail centres and the internet. Mineral activities offer employment for local people with a range of skilled and unskilled jobs available.

[9] Oxfordshire Quarterly Economic Update: March 2007 Oxford Economic Observatory, School of the Built Environment, Oxford Brookes University.

### 2.3.5 Waste

Of the total of approximately 2 million tonnes of waste managed in Oxfordshire each year, 42% is construction and demolition waste, 43% is commercial and industrial waste and 15% is municipal waste. The table below shows the annual arisings of different waste types in Oxfordshire.

***Table 2.1: Annual Arisings/Management of Waste in Oxfordshire in 2008 (tonnes)***

| Waste Type | Total Waste Arising/ Managed | Landfilled | Recycled/ composted | Recovered | Other Treatment |
|---|---|---|---|---|---|
| Construction and Demolition | 886,908[10] | 385,133[11] | 244,572[12] | 257,203 | - |
| Commercial and Industrial | 558,530[13] | 262,509[14] | 178,730 | - | 117,291 |
| Municipal Total | 323,054[15] | 197,613[16] | 125,294 | - | 147[17] |
| All Waste | 1768,492 | 845,255 | 548,596 | 257,203 | 117,438 |

Municipal Solid Waste (MSW) is defined as household waste and any other waste collected by Waste Collection Authorities. Household waste includes waste from Household Waste Recycling Centres (HWRCs), kerbside collection rounds, bring schemes, bulky waste collection, hazardous waste collection and street sweepings. The table below shows MSW arisings for the period 2006/2007 in Oxfordshire. Of just over 320,000 tonnes of municipal waste produced in Oxfordshire in 2007/08, about 37% was recycled or composted, with 63% being disposed, almost all by landfill.

[10] EA RATS database for calendar year 2007 (spreadsheet RC1).
[11] EA RATS database for 2007 (spreadsheet RLF1)
[12] Based on proportion of C and D waste recycled (28%) and recovered (29%) in Berkshire, Buckinghamshire and Oxfordshire by Capita Symonds study (SEERA) for 2005.
[13] ERM study of Oxfordshire's waste needs (Jan 2008)
[14] Based on the proportions of C&I waste landfilled, recycled/composted or sent for 'other treatment' in the OCC AMR 2006-2007.
[15] Oxfordshire County Council, Waste Management team
[16] Includes waste sent to landfill from Waste Recycling Companies and Waste Collection Agencies and domestic rubble and asbestos
[17] Domestic clinical waste sent for thermal treatment (2 destinations)

***Table 2.2: Municipal Waste Arising and Managed by Management Type 1 April 2007 – 31 March 2008 (tonnes)***

| | Waste Management Type | | | | |
|---|---|---|---|---|---|
| | Landfill | Recycled * (excluding green waste composted) | Composting of Green Waste * | Thermal Treatment | Total Municipal Waste |
| Household | 185,411 | 89,308 | 35,986 | 147** | 310,852 |
| Non-Household | 12,202 | - | - | | 12,202 |
| Total | 197,613 | 89,308 | 35,986 | 147 | 323,054 |
| Percentage | 61.2 | 27.6 | 11.1 | 0.05 | 100 |

* includes waste collected by waste collection authorities and at waste recycling centres. ** clinical waste disposed by specialist thermal treatment
*(Source: Oxfordshire County Council, Waste Management Group)*

For household waste only, the rate of recycling (28.31%) or composting (12%) in 2007/08 was 40.31%, an increase of 1.75% from 2006/07 and exceeding the 38% Local Area Agreement target for March 2009. However, this hides a significant disparity between districts: the recycling rate in Cherwell District was 45.1%, while in Oxford it was 24.1%. Most construction and demolition waste is recycled (36%) or recovered (32% mainly for use in restoration of mineral workings and landfills, land improvement and engineering works). About 32% is disposed to landfill. About 32% of commercial and industrial waste is recycled, with 47% being disposed to landfill and further 21% being treated some other way.

The County Council has recently carried out a review of waste capacity in the County. The results of the review are presented in table 2.3 below. Figures were obtained using information from planning applications, Environment Agency Licences and exemptions and site profile information from Environment Agency waste data (2005).

***Table 2.3 Capacity of Waste Management Facilities March 2006***

| Type of facility | Capacity (tonnes) |
|---|---|
| **Landfill** | |
| Inert landfill | 2,805,309 tonnes* |
| Hazardous Landfill | 9,115,348 tonnes* |
| Non-hazardous landfill | 0 tonnes* |
| TOTAL LANDFILL | 11,920,627 tonnes* |
| **Recycling, composting** | |
| MSW and C&I Recycling | 596,970 tonnes per annum* |
| C & D Recycling | 586,749 tonnes per annum** |
| MSW & C&I Composting | 111,000 tonnes per annum** |
| **Recovery** | |
| MSW & C&I Incineration | 0 tonnes per annum* |
| MSW & C&I Treatment | 127,000 tonnes per annum* |
| **Others** | |
| Vehicle Dismantling & Other Metal Recovery | 263,653 tonnes per annum* |
| **Total Waste Treatment Capacity** | **1,667,372 tonnes per annum** |
| MSW & C&I transfer | 349,761 tonnes per annum* |

* Source: Oxfordshire County Council, November 2008
**Source: Oxfordshire County Council – information from planning applications and decisions, 2008

## 2.4 Sustainability Issues and Problems

Following the policy context and baseline review, key sustainability issues facing minerals and waste planning in Oxfordshire were identified. These are listed below with a focus on those relevant to waste planning (the list excludes some issues that are specific to minerals):

- Population growth will lead to increased waste production and demand for waste management facilities across the whole county.
- Economic growth in Oxfordshire, which has slowed down behind neighbouring sub-regions in recent years, should be encouraged. Waste development could support economic growth through the provision of opportunities for unskilled labour.
- Tourism represents an important part of Oxfordshire's economy. Waste development could detract from initiatives to encourage people to visit the whole county, not just Oxford. However, post mineral restoration (involving imported waste) could create opportunities for rural development and recreational facilities.
- Climate change poses a threat to parts of the county through flooding. 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. Waste development should balance reducing air pollution by employing the 'proximity principle' with ensuring that waste transport minimises environmental impacts by using suitable roads.
- Seven Air Quality Management Areas have been identified in Oxfordshire, where levels of $NO^2$ from traffic exceed recommended government levels. 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 and smaller household size 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 and restriction on the availability of inert waste for quarry restoration for a temporary period.
- Waste site development will be constrained by the hierarchy of sites identified in PPS9 for their biodiversity value. Waste development could negatively impact on these sites.
- Waste development offers opportunities to improve access to rural areas create recreational facilities and contribute towards habitat creation in the County.
- Oxfordshire is a county which has a rich historic built environment. Waste development could result in the loss or destruction of some of the historic assets of the county such as Regionally Important Geological Sites, geological SSSIs or Scheduled Ancient Monuments.

- Water quality in Oxfordshire's rivers could be improved. Minerals and waste development could contribute to the pollution of water courses.
- Although some new waste management capacity has been permitted, a capacity gap remains between provision and demand over the plan period. Significant new capacity for waste treatment will be needed in order to meet regional targets for recovery, recycling and composting of waste and reduction in landfilling of waste; the MWDF will need to make provision for this.
- Significant provision needs to be made for secondary and recycled waste management facilities to continue to increase the amount of secondary and recycled aggregate which can be produced in the County.

## 2.5 SA Framework

In order to appraise the effects of the MWDF on sustainability, a series of Sustainability Objectives were developed during the scoping stage. These were developed and consulted on with key stakeholders and statutory consultees. They provide the benchmark for undertaking the appraisal and cover the full range of environmental impacts stipulated by the SEA Directive and Regulations, as well as economic and social issues relevant to Oxfordshire.

The objectives are underlain by detailed sub-objectives (appraisal criteria) which amplify the broad objectives and allow for the appraisal to capture the different level of detail as appropriate. They are also accompanied by indicators to aid in future monitoring and testing MWDF performance against current baseline. Table 2.4 below shows the SA Objectives that have been used to appraise the emerging waste planning policies.

*Table 2.4 SA Framework (objectives)*

| SA Objective | Appraisal Criteria/Sub-objectives | Possible Indicators |
|---|---|---|
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | Will the MWDF protect, maintain and enhance UK BAP Priority Habitats? | Number of permitted applications for 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 of planning applications which have an impact on designated sites or BAP habitats |
| | Will the MWDF conserve and enhance internationally, nationally and regionally important sites of nature conservation importance? | Number of permitted applications which result in restoration of favourable/favourable recovering condition or buffering of designated areas through appropriate habitat creation. |
| | Will the MWDF protect, maintain and enhance UK BAP Priority Species? | Number of permitted applications for waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Species Plans. |
| | Will it contribute to the aims of the Conservation Target Areas? | Contribution of the MWDF policies to Conservation Target Areas for restoration of waste management sites. |
| | Will it protect and conserve geological SSSIs and RIGs? | Number of permitted applications which include conditions for the protection or enhancement of RIGS or geological SSSIs. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | Will the MWDF conserve and enhance Oxfordshire's AONBs & their settings and take into account guidelines associated with specific landscape types? | Number of permitted applications for waste development which include conditions for the protection or restoration of statutory or non-statutory landscape designations. |
| | Will the MWDF protect and enhance the historic and prehistoric environment of Oxfordshire? | Number of permitted applications for waste development which include conditions for the protection or enhancement of the historic and prehistoric environment in Oxfordshire. |

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|---|---|---|
| 3. To maintain and improve ground and surface water quality | Will the MWDF affect groundwater quality? | Number of permitted applications affecting source protection zones 2 and 3<br>Number of permitted applications which assess the risk of contamination of groundwater |
| | Will the MWDF affect surface water quality? | 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 MWDF lead to increased traffic congestion in built up areas? | Number of permitted applications with routeing agreements which avoid AQMAs<br>Survey of trip generation to civic amenity sites |
| | Will the MWDF lead to increased dust and/or odours? | Number of complaints relating to dust/odours |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | Will the MWDF lead to a decrease in production of greenhouse gases such as methane? | Proportion of waste transported by rail or water<br>Quantity of biodegradable wastes landfilled |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | Number of sites that are permitted within flood risk zone as identified by PPS25. | Number of permitted sites for waste development within the flood plain (flood zone 3a/) |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | Will the MWDF reduce distances travelled by road? | Distances travelled by road from new applications to settlements<br>Number of sites with rail/water access |
| | Are sites in the MWDF well located in relation to surrounding settlements for waste, or minerals for markets? | Number of sites with suitable access to appropriate roads |
| | Will the waste facilities or mineral operation serve local needs? | |
| | Does the MWDF facilitate HGV routeing agreements and developer contributions for infrastructure | |

| | | |
|---|---|---|
| | improvements? | |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | Will the MWDF have impacts which could have a harmful effect on human health?<br>Will the MWDF result in loss of amenity through visual impact, noise, dust or vibration for local communities?<br><br>Will the MWDF provide opportunities for enhancement of local amenity and access to the countryside? | Number of permitted applications for waste development within 250m of sensitive receptors (settlements)<br><br>Number of sites for waste development within 250m of sensitive receptors (settlements)<br><br>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 MWDF affect high grade agricultural land?<br><br>Will the MWDF lead to soil pollution or contamination? | Area of high grade agricultural land lost to waste development<br><br>Incidences of land contamination related to waste development |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | Will the MWDF policies reduce the amount of waste produced? | Amount of waste arising in Oxfordshire |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | | Number of permitted applications for waste management to meet targets to achieve net waste self sufficiency. |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | Will the MWDF encourage the provision of more locally based skills and facilities?<br><br>Will the MWDF generate new jobs for the county? | Number of direct jobs created in the waste sector per year |

| | | |
|---|---|---|
| | Will the MWDF support and encourage the growth of small and medium size business? | Number of new waste permissions |

# 3 Appraisal Methodology

## 3.1 Approach

Planning Policy Statement 12 paragraph 4.43 states that: "*The Sustainability Appraisal should perform a key role in providing a sound evidence base for the plan and form an integrated part of the plan preparation process. Sustainability assessment should inform the evaluation of alternatives. Sustainability assessment should provide a powerful means of providing to decision makers, and the public, that the plan is the most appropriate given reasonable alternatives.*"

The approach adopted in undertaking the appraisal involved the following key tasks:

- Testing the Preferred Waste Planning Strategy vision and objectives against the SA objectives;
- Testing the emerging waste spatial options against the SA objectives;[18]
- Testing the emerging policies (Preferred Waste Planning Strategy) against the SA objectives.

The appraisal involved a textual analysis of the potential effects of the implementation of the emerging vision, objectives and policies. The assessment was a qualitative exercise based on professional judgement taking into account the information gathered in the Scoping report and other available background information relevant to the issues raised.

The Waste Planning Strategy was assessed in terms of the nature of its impacts (beneficial/adverse/neutral/uncertain), and their relative magnitude and duration over time. Matrices were used to identify the sustainability effects and these are provided in Appendix A.

[18] SA Report on Waste Spatial Options, URS/Scott Wilson August 2011.

# 4 Appraisal Findings

As described in chapter 3, the Waste Planning Strategy was assessed against the SA objectives and matrices used to record the appraisal findings. The summary appraisal findings are provided below. The detailed findings are shown in the matrices in Appendix A.

## 4.1 Vision

The vision for Oxfordshire's waste planning states that:

*By 2030 there will have been a transformation in the way Oxfordshire manages its waste with:*

- *Increased 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 landfill site*

*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.*

*Waste management facilities will be distributed across the county, with larger-scale and specialist facilities being located at or close to main transport links, and smaller-scale facilities at or close to small towns. This network will have helped to build more sustainable communities that increasingly take responsibility for their own waste and reduce the distance waste needs to be moved within the county.*

**SA Findings** –

The Council's vision for waste planning addresses the key sustainability issues underlying the SA objectives and is judged as having an overall positive effect. The vision supports a balanced approach that would ensure achievement of a sustainable waste management that is economically and environmentally efficient while at the same time meeting the county's need for waste management and ensuring Oxfordshire's residents take responsibility for their own waste. In particular, the vision supports SA objective 10 on contributing towards moving up the waste hierarchy as well as objective 11 on enabling Oxfordshire to be self-sufficient in waste management. By ensuring that facilities are well distributed across the county and close to main sources of waste arisings and main transport links, the vision supports SA objectives 4, 5 and 7 on air quality, climate mitigation and transport respectively. The vision also supports SA objectives relating to protection of the built and natural environment (and amenity) as it seeks to ensure that waste is managed in an environmentally efficient network of clean, well designed facilities.

## 4.2 Objectives

In order the deliver the above proposed vision, the Council has prepared the following strategic objectives:

i. *Provide for waste management capacity that enables Oxfordshire to be net self-sufficient in meeting its own waste needs.*

ii. *Provide for delivery, as soon as is practicable, of waste management facilities that will drive waste away from landfill and as far up the waste hierarchy19 as possible; in particular facilities to meet the targets for recycling and composting and for the treatment and diversion from landfill of Oxfordshire's remaining (residual) waste.*

iii. *Provide for waste to be managed as close as possible to where it arises to:*
- *minimise the distance waste needs to be transported by road;*
- *reduce adverse impacts of waste transportation on local communities and the environment;*
- *allow communities to take responsibility for their own waste;*
- *and generally provide for a broad distribution of facilities; whilst recognising that some types of waste management facility are uneconomic or not practical below a certain size and therefore will need to serve a wider area.*

iv. *Recognise that waste management is an integral part of community infrastructure and take opportunities to locate facilities in or close to the communities they serve, including in conjunction with planned growth, and for recovery and local use of energy (heat and power) from waste.*

v. *Recognise that waste will continue to be imported into Oxfordshire from London and elsewhere for disposal by landfill and seek to limit this to residual waste (following recycling and treatment elsewhere) and for the quantity to decrease over time as new facilities are provided where the waste is produced.*

vi. *Give priority to the use of previously developed land, including land within the Green Belt if appropriate, and ensure that new waste management facilities are sensitive to the amenities of local communities and do not cause unnecessary harm to the County's distinctive natural and built environment.*

vii. *Promote sustainable waste practice in new construction work based on the principle of keeping waste to a minimum, managing waste on site where possible, recycling construction waste as aggregate, and creating buildings and layouts that facilitate the recovery of resources from waste and opportunities for combined heat and power.*

viii. *Secure the satisfactory restoration of landfill sites and other temporary waste management sites, where the facility is no longer required or acceptable in that location, in keeping with the surrounding area.*

**SA Findings** –

Overall, the proposed objectives were found to be compatible with the SA objectives with the exception of objective v that seeks to continue to import waste from London into Oxfordshire. This objective has potential for negative impacts on SA objectives relating to air quality, climate mitigation and transport especially where waste is transported by road from London and elsewhere (some waste is transported by rail). The waste from London is mainly destined for disposal and this is in conflict with SA objective 10 which aims to move waste up the waste hierarchy. However, even with the identified potential negative impacts, it has to

[19] The waste hierarchy is shown at paragraph 2.17

be recognised that waste will continue to be imported into Oxfordshire from London and elsewhere. To minimise the potential adverse effects, objective v seeks to ensure that imported amounts decrease over time and that waste requiring disposal is limited to residual waste.

## 4.3 Strategic Policies

### 4.3.1 Policy W1 Amount of waste to be provided for

Policy W1 outlines the amount of waste to be provided for in Oxfordshire to enable the county to be net self-sufficient in the management of MSW, C&I and CD&E waste. When assessed against the SA objectives, policy WI supports SA objectives relating to reducing carbon emissions and minimising the transport impacts of transporting waste as making local provision would reduce the distances travelled for waste management. This policy directly supports SA objective 11 on self-sufficiency as it seeks to enable Oxfordshire to be self-sufficient in management of its waste. 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. Overall, this policy is in line with sustainability principles.

### 4.3.2 Policy W2 Waste imports

Policy W2 provides for disposal of a declining amount of waste from London and elsewhere at existing landfill sites in Oxfordshire. It does not provide for treatment facilities for waste from outside Oxfordshire unless there would be clear benefits within the county. When assessed against the SA objectives, this policy does not directly support any of the SA objectives. It would have negative effects on SA objectives related to ghg emissions and transport (although these are not likely to be significant as much of the waste imported is transported by rail). The policy is also in conflict with SA objectives 10 on contributing towards the waste hierarchy. However, restricting disposal to reducing amounts will reduce the negative impacts associated with landfilling of waste as the amounts disposed continue to decline.

### 4.3.3 Policy W3 Waste management targets

Policy W3 sets waste management target to provide for maximum diversion of waste from landfill. This policy supports SA objective 5 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 as it sets provision for additional recycling, composting and recovery capacity. This policy is also in line with SA objectives 11 on enabling Oxfordshire to become self-sufficient in its waste management and SA objective 12 on supporting the local economy as facilities required to meet the set targets offer potential for creation of local jobs.

### 4.3.4 Policy W4 Additional capacity

Policy W4 seeks to make provision for additional waste management capacity and sets out guideline figures. This policy has no impact on the majority of SA objectives as its focus is on ensuring that there are sufficient facilities to deal with Oxfordshire's waste arisings to 2030. However, the policy is assessed as likely to have positive impacts on the SA objective relating to moving waste up the hierarchy (by making provision for composting, recycling and treatment facilities) and the SA objective on enabling Oxfordshire to be self-sufficient in managing its waste. The development of facilities to provide the required capacity is also assessed as having a positive effect on the local economy through creation of new job opportunities.

### 4.3.5 Policy W5 Provision of waste management facilities

Policy W5 outlines the provision of different types of waste management facilities in Oxfordshire. The SA appraisal findings relating to the different types of waste management facilities are provided in the sections that follow. Detailed appraisal findings of the options considered previously are presented in the SA of Waste Spatial Options[20].

**MSW – Waste recycling**

At present, the Council's Waste Needs Assessment indicates that there is a surplus of MSW recycling provision in the county. However, there is a need to make provision for a new recycling facility to serve Banbury to replace the existing temporary facility at Alkerton. Making provision to meet local need in Banbury will ensure that waste is not transported far for recycling as it is dealt with closer to its source of arising. This has a positive effect on minimising GHG emissions associated with transporting waste by road as well as reducing the potential for other negative transport related impacts like congestion on the county's roads. Provision of recycling capacity also provides opportunities for further carbon savings as reprocessing of recycled material requires less energy than processing of raw materials. Overall, this policy is assessed as being in line with sustainability principles.

**MSW – Residual waste transfer stations**

Policy W5 recognises the need to provide for bulking up and transfer stations of residual MSW waste from southern and western parts of Oxfordshire for efficient transportation to the Ardley energy from waste facility to be built in 2015. Ardley is located in the north of the county. The Council has identified in its Waste Needs Assessment Report that the location of the plant in the north of the county may give rise to the need for up to two additional transfer stations to facilitate the effective delivery of waste to the plant. The proposed locations of the two residual transfer stations are south (Abingdon/Didcot/Wantage and Grove) and west (Witney/Carterton) areas of the county.

Providing for the residual transfer stations in the identified areas would facilitate the efficient transportation of waste to Ardley. This is assessed as having positive impacts on the SA objectives related to transport and climate mitigation as the transfer stations are likely to lead to less waste movement across the county from the south and west to the north, thereby reducing potential negative transport impacts (congestion, noise, vibration and air pollution) as well as minimising greenhouse gases (ghs) associated with waste transportation.

At a strategic level, the SA has not identified any obvious reasons for not locating the required residual waste transfer stations in the proposed broad areas. However, the potential impacts on the built and natural environment (as well as on amenity) of the proposed facilities should be addressed in detail at the site selection stage to ensure that development does not lead to adverse impacts on sensitive receptors including biodiversity, landscape, local amenity and the historic environment.

**C&I Recycling**

The Council estimates that there is a capacity gap of approximately 100,000 tpa by 2030 for recycling C&I waste and is primarily needed to serve the large towns of Bicester, Abingdon and Didcot and their surrounding areas and proposes to make additional provision at or close to large and smaller towns in:

- Northern Oxfordshire (Bicester); and
- Southern Oxfordshire (Abingdon; Didcot; Faringdon; Henley; Thame).

[20] SA of the Waste Spatial Options, URS/Scott Wilson August 2011.

From a transport and climate mitigation perspective, Policy W5 offers scope to provide for well located facilities across the county that will lead to waste being managed as closely as possible to where it arises, reducing impacts on the road network and minimising transport related ghg emissions. The potential impacts on the built and natural environment associated with the provision of C&I recycling facilities in the proposed areas should be considered during site selection and planning application stages to mitigate against potential adverse effects.

**C&I Residual Treatment**

The Council has identified an estimated gap in required provision for residual treatment of C&I waste of approximately 200,000 tpa by 2015. The existing consented sites for C&I treatment are both located in northern Oxfordshire (Ardley and Finmere). The Council has identified that further provision is required in the south and western parts of the county. The Council proposes to make provision for a single large facility in the Abingdon/Didcot/Wantage and Grove area (but also taking waste from the Witney/western part of the county). This option would lead to waste from the western part of the county being transported further for treatment and could therefore have some potential negative effects on the local road network (congestion, air pollution and noise from HGV traffic). It would also lead to increase in GHG emissions associated with road transportation of waste.
This proposal has potential for job creation and therefore a positive impact on the local economy. In taking policy W5 forward, consideration of potential impacts on the built and natural environment as well as on amenity will be required during the site selection process and planning application stages to ensure that development does not lead to adverse effects on the environment and community.

**C&D Recycling**

The Council estimates that approximately 500,000tpa a year by 2030 will be required for recycling of CD&E waste and that this is likely to be needed mostly in Bicester, Didcot, Wantage and Grove, but with some requirement also at Oxford, Banbury, Witney, Carterton, Abingdon and the smaller towns in southern Oxfordshire. The Council has also identified that half of the required additional capacity could be provided at temporary facilities at landfill and quarry sites across the county. Policy W5 seeks to provide for dispersed additional permanent CDE recycling capacity at or close to Oxford and large and smaller towns as well as make use of temporary facilities at landfill sites and quarry sites where opportunities arise across the county. This would ensure that provision is made as close to the sources of waste arising as possible reducing travel distances and GHG emissions associated with transporting waste. Allowing for use of temporary facilities at landfills and quarries further enhances these benefits. Further analysis of potential impacts on the built and natural environment should be undertaken at the site selection and planning application stages to mitigate against adverse impacts and the environment and local amenity.

### 4.3.6 Policy W6 Sites for waste management facilities

Policy W6 provides guidance on sites for waste management facilities. It requires developers to prioritise land that is already in permanent waste management or industrial use, is previously developed, derelict or underused, involves existing agricultural buildings and their curtilages and adjoins sewage treatment works or other compatible development. This policy also allows small scale development within AONB to serve local need and may allow facilities in the Green Belt to serve the needs of Oxford. This policy has potential for indirect positive impacts on protection of nature conservation by promoting use of previously developed land thereby reducing development of green field land which is likely to host local biodiversity. Use of derelict buildings and development of previously developed sites can also help improve local landscape and visual impacts. However, proposals for small scale facilities in the AONB may have negative impacts on the landscape. The supporting text to Policy W6 states that proposals in AONB would

need to be in keeping with the designations objectives. This would help mitigate against potential adverse impacts. Allowing small scale facilities in the AONB and facilities to serve Oxford in the Green Belt can help reduce the distances waste is transported therefore reducing ghg emissions and negative road transportation impacts. Use of previously developed land and derelict land especially where sites may have been previously contaminated can help to restore land quality and therefore policy W6 supports SA objective 9.

### 4.3.7 Policy W7 Landfill

The Council estimates that an additional 3 million cubic metres of capacity for disposal of inert waste that cannot be recycled will be required from around 2020. To meet this need, the Council proposes to make provision for this amount with priority given to use of inert waste to restore mineral workings. Permission will not be granted for new landfill sites for non-hazardous waste and existing non-hazardous landfill capacity will be safeguarded for disposal of residual non-hazardous waste. Policy W5 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.

Landfilling of non-inert waste is restricted to residual waste which is expected to decrease with time as more waste is recycled and treated, this will lead to future increases in waste diverted from landfill which will have a positive impact on SA objective 10 (in the longer-term). Providing for inert landfill especially for restoration purposes is assessed as having positive effects on improving land quality (SA objective 9). Policy W7 also supports county self-sufficiency.
The potential transport and climate mitigation impacts of the proposed approach are difficult to assess without knowing the location of sites. This should be addressed during site selection to ensure that sites are located close to sources of arisings. Other potential impacts on the built and natural environment should also be assessed in detail during site selection to mitigate against adverse effects.

### 4.3.8 Policy W8 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 hazardous waste management facilities, they currently tend to serve large catchment areas than a single county. Oxfordshire estimates that additional capacity could be required for approximately 50,000tpa of hazardous waste produced in the county. Policy W8 does not 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. This policy largely represents the 'Business as usual' scenario where Oxfordshire remains a net exporter of hazardous waste although it has potential for some minor positive impacts on transport related and ghg reduction impacts where facilities are provided locally. However, there will also be some minor negative impacts (transport related/ghg emissions) related to the export of some hazardous waste. Generally, the quantities of hazardous waste to be managed are expected to be relatively small and so the impacts (both positive and negative) are judged as likely to be minor. When considering planning applications for hazardous waste management facilities, potential impacts on the built and natural environment should be assessed in detail to mitigate against adverse effects. It is also expected that such proposals would be assessed by the Environmental Agency as required by hazardous waste management regulations/criteria.

### 4.3.9 Policy W9 Radioactive Waste

Policy W9 relates to the management of radioactive waste (intermediate and low level radioactive waste).

**Intermediate level radioactive** waste is produced at Harwell and smaller quantities at Culham. There is a requirement for treatment and long term storage of an estimated 10,000 cubic metres of intermediate level radioactive waste pending its eventual disposal at a national facility (outside Oxfordshire). Policy W9 proposes storage of the waste from both Culham and Harwell at the Harwell site. This would lead to some waste from Culham being transported to Harwel a distance of approximately 7 miles. Transport impacts are therefore assessed as likely to be minor due to the distance travelled and the relatively small quantities of waste to be transported from Culham.

The SA has identified the following sustainability issues that will need to be considered when dealing with applications for such a facility at Harwell:

- Potential impact on local biodiversity including a SSSI 7 kms to the south east of the site
- The close proximity to the North Wessex Downs AONB as well as potential local visual and landscape impacts
- Potential impacts on Scheduled monuments identified close to the site (within 5kms)
- Potential for ground water and surface water contamination
- Potential for land contamination
- Potential amenity and health impacts associated with management of intermediate level radioactive waste

Policy W9 also allows for additional waste to be brought to the Harwell site if circumstances are justified. The sustainability impacts of this approach will depend on the distance and quantities of waste to be transported as well as any benefits identified within Oxfordshire.

**Low Level radioactive waste**: It is estimated that a total of 100,000 cubic metres of low level radioactive waste (mainly arising from demolition and clearance of buildings) at Harwell and Culham will require to be disposed of. Policy W9 proposes temporary storage of this type of waste at both Harwell and Culham. When assessed against the SA objective policy W9 would lead to the least movement of low level radioactive waste as material will be stored where it is generated and therefore the policy performs well against SA objectives 5 and 7. The following key issues would need to be considered when assessing the potential development of storage facilities at Harwell and Culham:

Harwell: (as listed above for intermediate level radioactive waste)

Key issues that should be considered at Culham include:

- Potential impacts on local site biodiversity (there are no designated sites close to or within the site)
- Potential impacts on the AONB and Scheduled Monument site identified 1km east of the site
- Potential impacts on surface and ground water
- Potential amenity and health impact

Policy W9 envisages the eventual disposal of low level radioactive waste outside of Oxfordshire. The impacts of this approach will depend on the final disposal location, transportation means as well as the quantities of waste to be moved. This approach will also be required to be in line with national nuclear waste

disposal policy as well as environmental, health and safety regulations governing nuclear waste transportation and final disposal.

Policy W9 also allows for disposal at existing landfills in Oxfordshire, or at a bespoke facility at Harwell, if it can be demonstrated that no other suitable disposal facility is available and there is an overriding need to dispose of the waste in Oxfordshire. Potential impacts of this approach on sensitive receptors will vary depending on the location of landfill sites and these should be considered in detail at the planning application stage. The environmental issues identified previously as relevant for the Harwell site should be considered if the approach taken involved a bespoke disposal facility at this site. Disposing low level radioactive waste locally would reduce the distance travelled for the disposal of such waste and this is in line with the SA objective 5 and 7.

### 4.3.10 Policy W10 Safeguarding

Policy W11 relates to the safeguarding of waste management sites against other forms of development. This policy does not impact on most SA objectives as it specifically seeks to ensure that ensuring that safeguarded sites are not lost to other development. It is however assessed as having a positive indirect impact on SA objective 11 on enabling Oxfordshire to be self-sufficient in its waste management. This is because policy W11 would ensure that there are available sites within Oxfordshire suitable for waste management uses which provide potential developers with local site alternatives which in turn would lead to facilities being developed within Oxfordshire close to the source of waste arising. This would in turn have potential for indirect positive impacts on SA objectives 5 and 7 on reducing ghg emissions and transport related impacts.

## 4.4 Common Core Policies

### 4.4.1 Policy C1: Flooding

Policy C1 will have positive effects on a number of the SA objectives insofar as it protects valued habitats, flora and fauna, built heritage, landscapes, valuable agricultural land, local communities and businesses from damage, disruption and distress caused by flood events. However the sustainability of the policy in relation to SA objective 6 could be improved by reference to the future predicted impacts of climate change and the incorporation of adaptation measures to account for this, including any likely increased flood risk.

### 4.4.2 Policy C2: Water Environment

Policy C2 has a positive impact on many of the SA objectives, as water quality and quantity are an essential precursor to the proper functioning of ecosystems, landscapes, businesses and local communities. The sustainability of the policy in relation to Objective 8 could be improved by explicitly referring to the recreational values of maintaining water quality/quantity.

### 4.4.3 Policy C3: Environmental and Amenity Protection

Policy C3 seeks to protect the environment, residential amenity and other sensitive receptors from unacceptable adverse impacts. The ‘environment’ and ‘other sensitive receptors’ can be construed to include those SEA elements covered by the SA objectives, including biodiversity, landscape character and historic and built heritage, air and water; but it would be helpful if the policy could be more explicit in defining what constitutes the ‘environment’ or a ‘sensitive receptor’ in order to give more guidance to developers. It would also be helpful to provide some guidance as to what might constitute an “unacceptable adverse

impact". In addition, the potential impacts on human health, not just residential amenity should be considered (to comply with the SEA Directive requirements to consider effects on human health as captured by SA objective 8), and it might also be appropriate to consider local businesses as sensitive receptors, particularly where such businesses are dependent on a high quality environment and good amenity (e.g. tourism sector).

A cross reference in the supporting text to the Common Core Policies which deal with distinct elements of the 'environment' would also be helpful – for example to highlight linkages with Policy C2 for ground and surface water, Policy C4 for Biodiversity and Geodiversity, Policy C5 for Landscape and Policy C6 for the Historic Environment and Archaeology.

### 4.4.4 Policy C4: Biodiversity and Geodiversity

Policy C4 will have a positive impact on many of the SA objectives – as the protection of biodiversity provides many direct and indirect benefits for other SEA elements. Biodiversity/geodiversity features are essential elements of landscape character and quality. The proper functioning of ecosystem services which are provided by the flora and fauna resident within Conservation Target Areas will have long term positive impacts on air, water, soil, human health and the economy. Other long term benefits include reduced flood risk and carbon capture.

### 4.4.5 Policy C5: Landscape

Policy C5 will have a positive impact on many of the SA objectives – as the protection of landscape quality and character provides many direct and indirect benefits for other SEA elements. For example the proper functioning of ecosystem services which are provided by the flora and fauna resident within these landscape features will indirectly but positively impact over the long term on air, water, soil, human health and the economy, and provide such benefits such as reduced flood risk and carbon capture.

### 4.4.6 Policy C6: Historic environment and archaeology

Policy C6 has a positive impact on SA objective 2 as it relates to the protection of the historic and built heritage. It also has indirect positive impacts on a number of the other SEA elements, in particular landscape character, biodiversity and the economy. There is no direct relationship between this policy and the other SA objectives.

### 4.4.7 Policy C7: Transport

Transportation of waste that maintains or improves environmental and residential amenity has potential for positive impacts on biodiversity, landscape character and built heritage, local communities, businesses and sensitive biodiversity/soil/water features in the vicinity of roads used by waste traffic. Reducing the number of road miles travelled to reach waste management sites and addressing congestion through an efficient road network is likely to have a positive impact on SA objectives for air quality and greenhouse gas emissions, as a result of subsequently reduced air emissions from waste traffic, as well as facilitating the efficient functioning of those businesses that rely on the road network.

### 4.4.8 Policy C8: Rights of Way

Enhancements to the public rights of way network should have a long term indirect positive effect on a number of the SA objectives, by encouraging people to make local trips on foot or bicycle, reducing traffic conflicts on local roads,

reducing GHG emissions and improving local air quality, improving health through physical activity and generating business opportunities through recreation. Improved public access can also indirectly assist with the enhancement of landscape character and the settings of historic/built heritage.

## 4.5 Cumulative Effects

There is always a degree of uncertainty associated with cumulative effects at a strategic planning level, as the broad locations identified for future waste management development do not provide enough certainty as to the adverse effects that might be experienced at the operational level. Potential cumulative effects on specific receptors for example air; water and the transport network will become more apparent at the site selection stage, and will be assessed during the SA of the Sites Allocations DPD. At this stage more details will be available on allocated sites allowing for the detailed assessment of potential impacts on sensitive receptors.

The appraisal has identified the following potential cumulative (in-combination) effects of the policies operating together, based on the predicted performance of the Waste Planning Strategy policies against the SA objectives.

### 4.5.1 Adverse

**Waste Hierarchy -** Policies W2 (waste imports) and W7 (landfill) both have a negative impact on the SA objective relating to moving waste up the waste hierarchy and could lead to negative cumulative impacts especially if residual non-hazardous landfilling does not reduce in line with the policies' expectation. The delivery of recycling, composting and treatment capacity in the short to medium term (both in Oxfordshire and in London and other areas that export waste to Oxfordshire) will be critical to avoid the potential negative cumulative impacts of policies W2 and W7.

### 4.5.2 Beneficial

**Climate change mitigation –** Policies W1, W5 together with policies C3, C4, C5, C7 and C8 have potential for a cumulative positive impact on reducing GHG emissions. Together, these policies can help in mitigating against climate change by reducing overall GHG emissions associated with waste management in Oxfordshire.

**Flood risk** – Common Core Policies C1 - C5 when implemented together can assist to limit vulnerable development in areas at risk from flooding, and where development is allowed, adequate mitigation measures are in place and flood attenuation opportunities are implemented.

**Strategic and Local Road Network –**Common Core Policies C3, C7 and C8 will have a positive cumulative impact on ensuring the safe and efficient functioning of the road network.

**Local Communities and Human health** – The Common Core Policies seek to manage the effects of waste management in a way that protects the amenity of local communities, safeguards human health.

**Soil quality –** Policies W6 and W7 together with Common Core Policies C1, C4, C5, C7 and C8 will have a positive cumulative effect on restoring soil quality. Re-use of previously derelict land and providing restoration through inert landfill (W6 and W7) can help restore land quality.

**Self-Sufficiency –** Policies W1, W3, W7 and W11 together have the potential for positive cumulative impacts associated with achieving self-sufficiency in waste management for Oxfordshire.

**Economic growth – P**olicies W1, W3 and W4 in combination with all of the Common Core Policies have the potential to positively contribute to local economic growth. Together, these policies have potential for cumulative beneficial effects on the local economy by creating the preconditions for a healthy functioning economy through job creation, addressing traffic congestion and ecosystem requirements, and a healthy attractive place to live and work, and maintenance/creation of business opportunities to sustain growth.

## 4.6 Uncertainties and risks

Sustainability Appraisal is an inherently uncertain process that involves making predictions concerning environmental and sustainability conditions on the basis of often limited data.

The main uncertainty arising from the appraisal relates to the nature of impacts likely to arise at as a result of development of waste management facilities in the proposed broad locations. This is denoted by the symbol (?) in the appraisal matrices. The strategic nature of the appraisal and the broad nature of the proposed locations 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 current available information. The eventual impacts will depend 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 preparation of the Site Allocations DPD provides an opportunity for impacts to be considered in detail once potential sites have been identified. More detailed assessment will also be provided through the Environmental Impact Assessment and Integrated Pollution Prevention and Control (IPPC) processes which are required prior to planning consents and operating licences being issued by the planning authority and the Environment Agency respectively.

# 5 Monitoring

## 5.1 Introduction

In order to identify unforeseen adverse effects and to enable remedial actions to be taken, it is important to monitor the implementation of the Waste Planning Strategy. Monitoring some of the identified indicators will also enable gaps in the existing information to be filled providing a better impact prediction basis for future appraisals and revisions of the strategy.

In order to satisfy the requirements of the SEA Directive, monitoring relating to the effects of the Waste Planning Strategy and the environmental baseline are proposed. It is recommended that wherever possible, these are monitored as part of the MWDF monitoring as the majority of baseline information required will be relevant to both the MWDF and the SA.

## 5.2 Effects Monitoring

It is not necessary to monitor everything or to monitor an effect indefinitely. Effects monitoring has therefore been identified where it is judged that the effect could lead to a significant effect. This is considered for both adverse and beneficial effects.

***Table 5.1 Proposed Effects for Monitoring***

| Policy | Effects to be monitored | Proposed Indicators to be monitored |
|---|---|---|
| W1 | • Delivery of required capacity (self-sufficiency) | • Capacity delivered through new applications for the management of MSW, C&I, CD&E waste 2015, 2020, 2025 and 2030 |
| W2 | • Impact on the waste hierarchy<br>• Impact on ghg emissions and transportation | • Amount of waste imports landfilled in Oxfordshire (monitor if this is a declining amount)<br>• Amount of waste moved by rail/ road etc |
| W3 | • Diversion from landfill (impact on managing waste in line with hierarchy) | • % of waste composted, recycled and treated (MSW, C&I, CD&E)<br>• % of waste disposed to landfill (MSW, C&I, CD&E) |
| W4<br>W5 | • As W1 above | • As W1 above |
| W6 | • Impacts on the land<br>• Impact on AONB | • Number of permitted sites for waste that are co-located with other waste facilities, on previously developed land, derelict or underused land, use existing agricultural buildings<br>• Number of applications in the AONB |

| | | |
|---|---|---|
| W7 | • Impact on land restoration<br>• Diversion from landfill | • Number of permitted additional capacity for inert waste for infilling for restoration<br>• As W3 above |
| W9 | • Delivery of storage capacity | • Capacity delivered for storage of ILLR and LLR waste |
| C1 | • Flood risk and attenuation | • Number of permitted sites for waste development within the flood plain (flood zone 3a/) |
| C2 | • Unacceptable adverse impacts on water quality or quantity | • Number of permitted applications affecting source protection zones 2 and 3<br>• Number of permitted applications which assess the risk of contamination of groundwater<br>• Number of permitted applications requiring abstraction licences<br>• Number of sites within 50m of a watercourse |
| C3 | • Unacceptable adverse impacts on the environment, residential amenity and other sensitive receptors | • Number of permitted applications with routeing agreements which avoid AQMAs<br>• Number of complaints relating to dust/odours<br>• Number of permitted applications for mineral or waste development within 250m of sensitive receptors (settlements)<br>• Number of sites for mineral or waste development within 250m of sensitive receptors (settlements)<br>• Number of permitted applications with restoration conditions which enhance local amenity and /or improve access to the countryside.<br>• Area of high grade agricultural land lost to minerals and waste development<br>• Incidences of land contamination related to minerals and waste development |
| C4 | • Enhancement of Conservation Target Areas and long term maintenance of BAP priority habitats<br>• Unacceptable adverse impacts on designated sites for nature conservation and their settings<br>• Protection of | • Number 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<br>• Number of planning applications which have an impact on designated sites or BAP habitats<br>• Number of permitted applications which result in restoration of favourable/favourable recovering condition or buffering of designated areas through appropriate habitat creation. |

| | | |
|---|---|---|
| | nationally and regionally important geological features from harmful development | • Number of permitted applications for minerals and waste development which include a restoration scheme which contributes to the objectives of Oxfordshire Species Plans.<br>• Contribution of the MWDF policies to Conservation Target Areas for restoration of minerals and waste management sites.<br>• Number of permitted applications which include conditions for the protection or enhancement of RIGS or geological SSSIs. |
| C5 | • Protection and enhancement of landscape quality.<br>• Sensitive siting, design and landscaping | • Number of permitted applications for Minerals and Waste development which include conditions for the protection or restoration of statutory or non-statutory landscape designations. |
| C6 | • Conservation and protection of historic assets and their settings<br>• Preservation of archaeological remains in situ | • Number of permitted applications for Minerals and Waste development which include conditions for the protection or enhancement of the historic and prehistoric environment in Oxfordshire. |
| C7 | • Maintenance of the safety, efficiency and quality of the road network<br>• Maintenance of residential and environmental amenity<br>• Minimisation of road miles travelled to reach markets<br>• Alternative transportation of minerals (rail, water, pipeline, conveyor) | • Proportion of waste and aggregates transported by rail or water<br>• Distances travelled by road from new applications to markets<br>• Number of sites with rail/water access<br>• Number of sites with suitable access to appropriate roads<br>• Number of complaints relating to dust/odours |
| C8 | • Maintenance and enhancement of the rights of way network | • Number of permitted applications with restoration conditions which enhance local amenity and /or improve access to the countryside. |

## 5.3 Baseline Indicator Monitoring

Monitoring selected baseline indicators can also help establish a causal link between implementation of the waste policies and the likely effects being monitored. Changes in the direction of indicators can be measured against the existing baseline position as well as against other comparable data (e.g. regional/national trend) to establish whether similar effects are occurring elsewhere.

This is best achieved by establishing a common set of core indicators. Oxfordshire County Council has developed a set of core indicators to monitor the performance of the MWDPD Core Strategy. To avoid duplication of effort and facilitate a cost-effective and efficient way of monitoring both the Core Strategy and the SA indicators, it is recommended that the SA monitoring is incorporated into the existing performance monitoring for the MWDPD (MWDF).

The following baseline indicators (Table 5.2) were identified during the Scoping stage and should be monitored as part of the waste policies monitoring.

*Table 5.2 Baseline indicators*

| **Table 5.1** | **Baseline** | **Indicators** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Oxfordshire MWDF SEA/SA Baseline Review** | | | | | | | | |
| Indicator | Oxfordshire | South East Region | UK | Target | Local trend | Indicator Status | Commentary | Source |
| **Population** | | | | | | | | |
| Population | 635,600 | 8,000,645 | 60,975,000 | | 10.7% growth between 1996 and 2006 | | | Office for National Statistics |
| Population density(persons/km²) | 2.3/ha | 4.2/ha | 3.8/ha | | | | Oxon is the least densely populated county in the SE. The MWDF needs to be aware of accessibility to amenities for a low density population. | http://www.sepho.org.uk/Download/Public/10171/1/Population%20Information%20Bulletin_1.pdf |
| Index of Multiple Deprivation | The county was ranked 137th out of 149 county areas in 2007 | | | | | | There are some areas of deprivation within the county, such as some wards in Oxford city and in Banbury | DCLG (2007) Indices of Deprivation County Council summaries |
| % of the working age pop in employment | 81.1% in 2006 | | | | This has stayed steady around 81% since 2000 | | | http://www.areaprofiles.audit-commission.gov.uk |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Population change | 1991-2001: 10.6% | 1991-2001: 6.7% | 1991-2001: 4.4% | | Growth rates significantly above the national average. | | Potential impact on demand for waste management facilities and aggregates. | Oxfordshire Data Observatory www.oxfordshireobservatory.info |
| Life expectancy at birth for men and women | Males:78.8 Females: 82.4 | Males:78.1 Female: 82.0 | Males: 76.9 females: 81.1 | | Improved life expectancy | | There are some significant differences between wards, and between Oxford and the rest of the county. | Oxfordshire Data Observatory |
| **Biodiversity** | | | | | | | | |
| % of SSSIs in favourable condition | 48.1 | 46 | 45 | Govt's PSA target to have 95% SSSIs in favourable or recovering condition by 2010 | | | SSSIs in Oxford and W Oxfordshire already meet govt target | TVERC, Natural England |
| Area of SSSIs in recovering favourable condition | 36.1 | 33 | 28 | Govt's PSA target to have 95% SSSIs in favourable or recovering condition by 2010 | | | SSSIs in Oxford and W Oxfordshire districts already meet govt target - MWDF needs to avoid negative impacts on SSSIs in recovering condition | TVERC, Natural England |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| % change in number of farmland birds in Oxon | -13% | -21% | | 2006 farmland bird PSA 1966-2005 | | | Used by government as an indicator of trends in biodiversity | TVERC |
| Extent of priority habitats | 6 SACs, 4 NNRs, 17 LNRs | | | | | | | Oxfordshire Data Observatory |
| **Built and historic environment** | | | | | | | | |
| % Grade I & Grade II* listed considered 'at risk' | 5 buildings considered 'at risk' | 169 buildings, 5 fewer than in 2007 | | No buildings | | | | English Heritage |
| **Water Quality & Resources** | | | | | | | | |
| Rivers of good biological quality | 86.5% in S Oxon, 19% in Oxford | 78% | 70% | National target of 95% rivers to reach good standard | | | | Environment Agency http://www.sustainable-development.gov.uk/regional/se/30.htm |
| Rivers of good chemical quality | 90.1% good quality in S Oxon, 54.3% in Cherwell | 55% | 62% | National target of 95% rivers to reach good standard | | | River quality varies greatly between districts. | http://www.sustainable-development.gov.uk/regional/se/30.htm |

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|---|---|---|---|---|---|---|---|---|
| Daily domestic water usage | 158 | | 154.14 | TW's target consumption is 158l/head/day | Expected to increase | | Thames Water expects population growth, which will lead to increased demand. | The Audit Commission |
| **Climate Change** | | | | | | | | |
| Total CO2 emissions per capita in 2005 | 10.2 | 8.4 | 9.3 | Reduction of 12.5% of emissions of greenhouse gases by at least 12.5% of 1990 levels by 2012 | Higher than national or regional averages | | | Oxfordshire Data Observatory: CO2 emissions |
| Properties at risk from flooding | 5491 properties in Oxford | 310,000 | 2 million | | | | M & W development must not exacerbate flood risk in Oxon. | www.environment-agency.gov.uk |
| **Air Quality** | | | | | | | | |
| Number of designated AQMAs | Seven | | 223 local authorities have declared at least 1 AQMA | | Increasing: 2006 there were 4 | | Each district carries out monitoring and is required to identify an AQMA if air quality falls below a certain level. | www.oxfordshire.gov.uk |
| **Transport** | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bus journeys undertaken in Oxfordshire | Increased by 3.7% between 2005/2006 and 2006/2007 | | | DoT target 12% increase in bus journeys nationally | | | An increase in the number of people travelling by bus potentially reduces road congestion and air pollution from traffic. | Oxfordshire Data Observatory |
| Traffic on non-motorway roads | Between 1996 and 2006, traffic increased by 12,5% | | Traffic levels increased by 1.3% between 2001 and 2002 | Govt hopes to approach zero growth in traffic by 2010 | Local trends are in line with national trends, showing a steady increase. | | | National statistics transport statistics bulletin, Oxon data Observatory |
| **Waste** | | | | | | | | |
| Waste produced | 2m tonnes | | | | | | | |
| Amount of MSW landfilled (tonnes) | 210,000 (2008) | 4.5m tonnes produced: 76% went to landfill | | 56,700 tonnes by 2019/2020(EU Landfill Directive 1999) | | | Amount of waste going to landfill needs to decrease significantly to avoid fines under landfill tax. MWDF needs to identify potential for alternative technologies to dispose of waste. | Oxfordshire Waste Partnership. Environment Agency |
| Recycled | 38.6% household waste recycled 2006-07. | | | Recycle or compost at least 55% household waste by 2020 | Gradual increase of amount of household waste recycled | | | Oxfordshire Waste Strategy 2000, Oxfordshire Data Observatory |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Composted | | | | | | | | |
| **Land and resources** | | | | | | | | |
| Loss of Grade I and Grade II agric land | 1,328 ha Grade 1 (0.5%). 51,021 ha Grade II (19.6%) | | Grade 1:2.7%, Grade II: 14.2% | | Data gap | | Not known | http://www.defra.gov.uk/rds/lgmt/docs/ALC-Stats071105.pdf |
| Average house price | £289,130 | £264,906 | £219,262 | | Change in last year: +4.4%. Change in last quarter: -0.3% | | Affordability a problem for first time buyers. | http://news.bbc.co.uk/1/shared/spl/hi/in_depth/uk_house_prices |
| Number of new developments on brownfield sites | 1999-2004: 52% | | 67% | UK target: 60% by 2008 | Slowly increasing | | | Oxfordshire Data Observatory |
| **Economy** | | | | | | | | |
| Value of tourism | | | | | | | | |
| Employment growth | 3.3% 1998-2005 | | 8% 1998-2005 | | Increasing but more slowly than adjoining counties | | | Oxon quarterly economic update, OEO |

# 6 Next Steps

## 6.1 Commenting on the Sustainability Appraisal

In order to take account of the views of the community and other stakeholders there will be a period of formal consultation on the Preferred Waste Planning Strategy. The Sustainability Appraisal can be read alongside this document to inform consultation responses and comments can be made on the Sustainability Appraisal Report. Consultation details are available at www.oxfordshire.gov.uk

If consultation gives rise to significant changes that have not already been subject to Sustainability Appraisal, the Council will then be required to undertake an appraisal of these changes before the plan can be published for submission.

# APPENDIX A: ASSESSMENT OF SIGNIFICANT EFFECTS

The following table provides an explanation to the symbols used in the appraisal.

| Symbol | Likely effect on the SA Objective |
|---|---|
| ++ | The option is likely to have a **very positive** impact |
| + | The option is likely to have a **positive** impact |
| 0 | **No significant effect** / **no clear link** |
| ? | **Uncertain** or **insufficient information** on which to determine impact |
| - | The option is likely to have a **negative** impact |
| - - | The option is likely to have a **very negative** impact |
| +/- | The option is likely to have some positive and some negative effect |

**Vision**
By 2030 there will have been a transformation in the way Oxfordshire manages its waste with:

- Increased 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 landfill site

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. Waste management facilities will be distributed across the county, with larger-scale and specialist facilities being located at or close to main transport links, and smaller-scale facilities at or close to small towns. This network will have helped to build more sustainable communities that increasingly take responsibility for their own waste and reduce the distance waste needs to be moved within the county.

| SA Objectives | | Summary and mitigation measures |
|---|---|---|
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | + | The vision seeks to achieve an environmentally efficient network of waste management facilities. This is taken to mean that such developments will give consideration to potential environmental impacts (including biodiversity, landscape character and historic environment, ground and surface water) and adequate mitigation measures provided as appropriate. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | + | |
| 3. To maintain and improve ground and surface water quality | + | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | + | The distribution of waste management close to sources of arising has potential for positive air quality impacts through reduced air pollution as well as reducing greenhouse gas emissions (GHGs) associated with waste transportation. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | + | |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | + | The vision seeks to achieve an environmentally efficient network of waste management facilities. This is taken to mean that such developments will give consideration to potential environmental impacts (including on flooding transport, local amenity and land/soil quality)) and adequate mitigation measures provided as appropriate. |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | + | |
| 8. To minimise the 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 | + | |
| 10. To contribute towards moving up the waste | ++ | The vision seeks to increase the amount of waste that is recycled, composted and treated and only dispose the |

| | | |
|---|---|---|
| hierarchy in Oxfordshire | | minimum amount of waste to landfill. |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | ++ | The vision supports the county's aim to be largely self-sufficient in dealing with the waste it generates. |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | + | The vision seeks to support Oxfordshire's thriving economy. |

**Summary –**

The Council's vision for waste planning addresses the key sustainability issues underlying the SA objectives and is judged as having an overall positive effect. The vision supports a balanced approach that would ensure achievement of a sustainable waste management that is economically and environmentally efficient while at the same time meeting the county's need for waste management and ensuring Oxfordshire's residents take responsibility for their own waste. In particular, the vision supports SA objective 10 on contributing towards moving up the waste hierarchy as well as objective 11 on enabling Oxfordshire to be self-sufficient in waste management. By ensuring that facilities are well distributed across the county and close main sources of waste arisings and main transport links, the vision supports SA objectives 4, 5 and 7 on air quality, climate mitigation and transport respectively. The vision also supports SA objectives relating to protection of the built and natural environment (and amenity) as it seeks to ensure that waste is managed in an environmentally efficient network of clean, well designed facilities.

## Objectives

The following table provides an explanation to the symbols used in the compatibility appraisal of the proposed Waste Objectives and the Sustainability Appraisal Objectives.

| Symbol | Likely effect on the Sustainability Objective |
|---|---|
| + | Objective compatible |
| 0 | Objectives not related |
| - | Objectives incompatible |
| ? | The objective relationship is unknown or is dependent on implementation |

| SA Objectives / Proposed Waste LDF Objectives | SA1. Biodiversity and Geodiversity | SA2. Landscape and Historic built heritage | SA3. Ground and Surface water quality | SA4. Air Quality | SA5. Green house gas emissions | SA6.Flooding and Climate change adaptation | SA7. Transport | SA8. Human Health and Local Amenity | SA9. Land and Soil Quality | SA10. Waste Hierarchy | SA11. Waste and minerals management | SA12. Economic Growth |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBJECTIVE i | 0 | 0 | 0 | + | + | 0 | + | 0 | 0 | 0 | ++ | + |
| OBJECTIVE ii | ? | ? | ? | ? | + | 0 | 0 | ? | ? | ++ | + | + |
| OBJECTIVE iii | + | + | + | + | + | + | ++ | + | + | 0 | 0 | + |
| OBJECTIVE iv | 0 | 0 | 0 | 0 | + | 0 | ++ | 0 | 0 | 0 | + | + |

| **SA Objectives** / **Proposed Waste LDF Objectives** | **SA1. Biodiversity and Geodiversity** | **SA2. Landscape and Historic built heritage** | **SA3. Ground and Surface water quality** | **SA4. Air Quality** | **SA5. Green house gas emissions** | **SA6.Flooding and Climate change adaptation** | **SA7. Transport** | **SA8. Human Health and Local Amenity** | **SA9. Land and Soil Quality** | **SA10. Waste Hierarchy** | **SA11. Waste and minerals management** | **SA12. Economic Growth** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OBJECTIVE v | 0 | 0 | 0 | -/? | - | 0 | - | 0 | 0 | - | 0 | + |
| OBJECTIVE vi | + | + | + | + | 0 | + | 0 | ++ | ? | 0 | 0 | 0 |
| OBJECTIVE vii | 0 | 0 | 0 | 0 | + | 0 | 0 | 0 | 0 | + | 0 | 0 |
| OBJECTIVE viii | ?/+ | ?/+ | ?/+ | ?/+ | ?/+ | + | 0 | +/? | + | 0 | 0 | 0 |

Overall, the proposed objectives were found to be compatible with the SA objectives with the exception of objective v that seeks to continue to import waste from London into Oxfordshire. This objective has potential for negative impacts on SA objectives relating to air quality, climate mitigation and transport especially where waste is transported by road from London and elsewhere. The waste from London is mainly destined for disposal and this is in conflict with SA objective 10 which aims to move waste up the waste hierarchy. However, even with the identified potential negative impacts, it is recognised that waste will continue to be imported into Oxfordshire from London and elsewhere. To minimise the potential adverse effects, the objective v seeks to ensure that imported amounts decrease over time and that waste requiring disposal is limited to residual waste.

The objective vi supports SA objectives relating to protection of the built and natural environment as well as amenity. Objectives i,ii, iii, iv are assessed as having positive effects on mitigating against climate change and reducing negative transport impacts by reducing the distance waste is transported. They also allow for self sufficiency as they support provision of waste facilities close to the sources of waste arising.

The proposed objectives can help to deliver a sustainable waste management strategy for Oxfordshire. However, there is a need to ensure the achievement of the desired aim in objective v to reduce the quantities of imported waste that is managed in Oxfordshire over time.

## Strategic Policies

**Policy W1: The amount of waste to be provided for:**

Provision will be made to enable Oxfordshire to be net self-sufficient in the management of municipal waste, commercial and industrial waste and construction, demolition and excavation waste. Provision should be made for waste facilities sufficient to manage the following amounts of waste over the period to 2030:

- Municipal Solid Waste – 370,000 tonnes per annum;
- Commercial and Industrial Waste – 640,000 tonnes per annum;
- Construction Demolition and Excavation Waste – 1,300,000 tonnes per annum.

| SA Objectives | | Summary and mitigation measures |
|---|---|---|
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | 0 | |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | 0 | |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | + | Making local provision would have positive impacts on reducing distance travelled and therefore reducing ghg emissions associated with waste transportation |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | + | Making local provision would have positive impacts on reducing the overall distances waste travels for management potentially reducing the impact of transportation of waste |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | ? | Impact on local communities is dependent of the location of waste management facilities and mitigation measures associated with their development and operation. |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | ? | This policy is concerned with the amount to be provided for. The waste management routes proposed elsewhere in the Waste Strategy will determine if the proposals will contribute towards moving waste up the waste hierarchy. |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to | ++ | Policy W1 directly supports self-sufficiency |

| | | |
|---|---|---|
| make a sustainable contribution to its sub-regional minerals apportionment. | | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | + | Making local provision would have a positive impact through new facilities that would provide local jobs |
| **Summary –**<br>Policy W1 outlines the amount of waste to be provided for in Oxfordshire to enable the county to be net self-sufficient in the management of MSW, C&I and CD&E waste. When assessed against the SA objectives, policy WI supports SA objectives relating to reducing carbon emissions and minimising the transport impacts of transporting waste as making local provision would reduce the distances travelled for waste management. This policy directly supports SA objective 11 on self-sufficiency as it seeks to enable Oxfordshire to be self-sufficient in management of its waste. 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. Overall, this policy is in line with sustainability principles. | | |

| **Policy W2: Waste Imports**<br>Provision will be made for disposal of a declining amount of waste from London and elsewhere at existing landfill sites. Facilities which provide substantially for the treatment of waste from outside Oxfordshire will not be permitted unless there would be clear benefits within Oxfordshire. | | |
|---|---|---|
| **SA Objectives** | **Option** | **Summary and mitigation measure** |
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | 0 | |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | 0 | |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | - | Waste importation leads to waste travelling from far for disposal in Oxfordshire leading to ghg emissions. However, it is expected that much of this waste will be transported by rail as is currently the case. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and | - | Waste importation could mean waste travelling from far for disposal in Oxfordshire leading to some impacts on the road transport network. However, it is expected that much of this waste will be transported by rail as is currently the case and |

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| strategic road network | | so the impacts are assessed as minor. |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | ? | Impact on local communities is dependent of the location of waste disposal sites and mitigation measures associated with their operation. |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | - | Landfilling is the option of last resort and it does not contribute towards moving waste up the hierarchy. However, it is recognised that it plays an import role in meeting waste management needs. Policy W2 restricts disposal to reducing amounts over time as new facilities (recycling and recovery) are built. |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | 0 | |
| **Summary** – Policy W2 provides for disposal of a declining amount of waste from London and elsewhere at existing landfill sites in Oxfordshire. It does not provide for treatment facilities for waste from outside Oxfordshire unless there would be clear benefits within the county. When assessed against the SA objectives, this policy does not directly support any of the SA objectives. It would have negative effects on SA objectives related to ghg emissions and transport (although these are not likely to be significant as much of the waste imports is transported by rail). The policy is also in conflict with SA objectives 10 on contributing towards the waste hierarchy. However, restricting disposal to reducing amounts will reduce the negative impacts associated with landfilling of waste as the amounts disposed continue to decline. | | |

| **Policy W3: Waste Management Targets**<br>Provision will be made for waste to be managed in accordance with the targets set in the Waste Strategy to provide for the maximum diversion of waste from landfill (targets shown in paragraph 4.23 of Waste Strategy document). | | |
|---|---|---|
| **SA Objectives** | **Option** | **Summary and mitigation measure** |
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | 0 | |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | 0 | |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain | 0 | |

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| air quality to levels which do not damage natural systems | | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | + | The strategy seeks to minimise disposal of waste to landfill. This has positive impacts on reducing ghgs associated with landfilling biodegradable waste. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | 0 | |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | ++ | The policy seeks to make provision for additional recycling, composting and recovery resources and minimise disposal |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | + | The targets support SA objective 11 on enabling Oxfordshire to be self-sufficient in waste management |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | + | The facilities required to meet the targets have potential to create new job opportunities. |
| **Summary** – Policy W3 sets waste management target to provide for maximum diversion of waste from landfill. This policy supports SA objective 5 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 as it sets provision for additional recycling, composting and recovery capacity. This policy is also in line with SA objectives 11 on enabling Oxfordshire to become self-sufficient in its waste management and SA objective 12 on supporting the local economy as facilities required to meet the set targets offer potential to create local jobs. | | |

| **Policy W4: Provision of additional waste management capacity**<br>Provision for additional waste management capacity will be made in accordance with the following guideline figures (Figures provided in paragraph 4.27 of the Draft Waste Planning Strategy) | | |
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| **SA Objectives** | **Option** | **Summary and mitigation measure** |
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | 0 | |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | 0 | |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | 0 | |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | 0 | |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | + | Policy W4 will ensure there is sufficient capacity including recycling, composting and treatment which will contribute towards moving up the waste hierarchy. |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | + | Policy W4 will contribute towards enabling Oxfordshire to be self-sufficient in its waste management |
| 12. To support Oxfordshire's economic | + | New waste management facilities are likely to provide local job opportunities and therefore support the local economy. |

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| growth and reduce disparities across the county | | |

**Summary** –

Policy W4 seeks to make provision for additional waste management capacity and sets out guideline figures. This policy has no impact on the majority of SA objectives as its focus is ensuring that there are sufficient facilities to deal with Oxfordshire's waste arisings to 2030. However, the policy is assessed as likely to have positive impacts on the SA objective relating to moving waste up the hierarchy (by making provision for composting, recycling and treatment facilities) and the SA objective on enabling Oxfordshire to be self-sufficient in managing its waste. The development of facilities to provide the required capacity is also assessed as having a positive effect on the local economy through creation of new job opportunities.

**Policy W5: Provision of waste management facilities**

For municipal waste, provision will be made for:

- A household waste recycling centre to serve Banbury;
- Two residual waste transfer stations in the Abingdon / Didcot / Wantage & Grove and the Witney / Carterton areas of the county.

For the other main waste types, provision will be made for:

- Additional permanent recycling plants for commercial and industrial waste at or close to Oxford and towns in the northern (Banbury; Bicester) and southern (Abingdon; Didcot; Faringdon; Henley; Thame) areas of the county;
- A plant for treatment of and recovery of resources from residual commercial and industrial waste (which is not recycled) in the Abingdon / Didcot / Wantage & Grove area;
- Additional permanent recycling plants for construction, demolition and excavation waste (to produce recycled aggregates and soils) at or close to Oxford and the large and smaller towns in the rest of the county; and temporary recycling plants located at landfill and quarry sites across Oxfordshire.

Broad locations that are proposed for strategic waste facilities are identified in the key diagram. Waste management facilities will be permitted at suitable sites within these broad locations.

Small scale facilities to serve local needs may be acceptable outside these locations where they meet the criteria in policy W6. Sites for new waste management facilities will be identified in a site allocations document.

| SA Objectives | Option | Summary and mitigation measure |
|---|---|---|
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | 0 | Impacts will vary for the various types of proposed facilities. See detailed SA findings for individual waste types in the SA Report for Waste Spatial Options[21]. Summary findings are provided below. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | 0 | |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |

[21] SA Report – Oxfordshire Waste Spatial Options (Draft August 2008).

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| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | 0 | |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | 0 | |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | 0 | |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | 0 | |

**Summary** –

**MSW – Waste recycling**

At present, the Council's Waste Needs Assessment indicates that there is a surplus of MSW recycling provision in the county. However, there is a need to make provision for a new recycling facility to serve Banbury to replace the existing temporary facility at Alkerton. Making provision to meet local need in Banbury will ensure that waste is not transported far for recycling as it is dealt with closer to its source of arising. This has a positive effect on minimising GHG emissions associated with transporting waste by road as well as reducing the potential for other negative transport related impacts like congestion on the county's roads. Provision of recycling capacity also provides opportunities for further carbon savings as reprocessing of recycled material requires less energy than processing of raw materials. Overall, this policy is assessed as being in line with sustainability principles.

**MSW – Residual waste transfer stations**

Policy W5 recognises the need to provide for bulking up and transfer stations of residual MSW waste from southern and western parts of Oxfordshire for efficient transportation to the Ardley energy from waste facility to be built in 2015. Ardley is located in the north of the county. The Council has identified in its Waste Needs Assessment Report that the location of the plant in the north of the county may give rise to the need for up to two additional transfer stations to facilitate the effective delivery of waste to the plant. The proposed locations of the two residual transfer stations are south (Abingdon/Didcot/Wantage and Grove) and west (Witney/Carterton) areas of the county.

Providing for the residual transfer stations in the identified areas would facilitate the efficient transportation of waste to Ardley. This is assessed as having positive impacts on the SA objectives related to transport and climate mitigation as the transfer stations are likely to lead to less waste movement across the county from the south and

west to the north, thereby reducing potential negative transport impacts (congestion, noise, vibration and air pollution) as well as minimising greenhouse gases (GHGs) associated with waste transportation.

At a strategic level, the SA has not identified any obvious reasons for not locating the required residual waste transfer stations in the proposed broad areas. However, the potential impacts on the built and natural environment (as well as on amenity) of the proposed facilities should be addressed in detail at the site selection stage to ensure that development does not lead to adverse impacts on sensitive receptors including biodiversity, landscape, local amenity and the historic environment

**C&I Recycling**

The Council estimates that there is a capacity gap of approximately 100,000 tpa by 2030 for recycling C&I waste and is primarily needed to serve the large towns of Bicester, Abingdon and Didcot and their surrounding areas and proposes to make additional provision at or close to large and smaller towns in:

- Northern Oxfordshire (Bicester); and
- Southern Oxfordshire (Abingdon; Didcot; Faringdon; Henley; Thame).

From a transport and climate mitigation perspective, Policy W5 offers scope to provide for well located facilities across the county that will lead to waste being managed as closely as possible to where it arises, reducing impacts on the road network and minimising transport related GHG emissions. The potential impacts on the built and natural environment associated with the provision of C&I recycling facilities in the proposed areas should be considered during site selection and planning application stages to mitigate against potential adverse effects.

**C&I Residual Treatment**

The Council has identified an estimated gap in required provision for residual treatment of C&I waste of approximately 200,000 tpa by 2015. The existing consented sites for C&I treatment are both located in northern Oxfordshire (Ardley and Finmere). The Council has identified that further provision is required in the south and western parts of the county. The Council proposes to make provision for a single large facility in the Abingdon/Didcot/Wantage and Grove area (but also taking waste from the Witney/western part of the county). This option would lead to waste from the western part of the county being transported further for treatment and could therefore have some potential negative effects on the local road network (congestion, air pollution and noise from HGV traffic). It would also lead to increase in GHG emissions associated with road transportation of waste.

This proposal has potential for job creation and therefore a positive impact on the local economy. In taking policy W5 forward, consideration of potential impacts on the built and natural environment as well as on amenity will be required during the site selection process and planning application stages to ensure that development does not lead to adverse effects on the environment and community.

**C&D Recycling**

The Council estimates that approximately 500,000tpa a year by 2030 will be required for recycling of CD&E waste and that this is likely to be needed mostly in Bicester, Didcot, Wantage and Grove, but with some requirement also at Oxford, Banbury, Witney, Carterton, Abingdon and the smaller towns in southern Oxfordshire. The Council has also identified that half of the required additional capacity could be provided at temporary facilities at landfill and quarry sites across the county. Policy W5 seeks to provide for dispersed additional permanent CDE recycling capacity at or close to Oxford and large and smaller towns as well as make use of temporary facilities at landfill sites and quarry sites where opportunities arise across the county. This would ensure that provision is made as close to the sources of waste arising as possible reducing travel distances and GHG emissions associated with transporting waste. Allowing for use of temporary facilities at landfills and quarries further enhances these benefits. Further analysis of potential impacts on the built and natural environment should be undertaken at the site selection and planning application stages to mitigate against adverse impacts and the environment and local amenity.

**Policy W6: Sites for waste management**

In providing for additional waste management capacity priority will be given to land that:

- is already in permanent waste management or industrial use;
- is previously developed, derelict or underused;
- involves existing agricultural buildings and their cartilages;
- adjoins sewage works or other uses compatible with waste management development.

Waste management facilities will not be permitted on green field land unless there is an established over-riding need and it has been demonstrated that there are no more suitable sites available.

Within Areas of Outstanding Natural Beauty, only small-scale waste management facilities to meet local waste needs will normally be permitted.

Waste management facilities to serve the needs of Oxford may be allowed in the Green Belt where it can be shown that there is an established over-riding need and no reasonable prospect of an alternative site becoming available such that very special circumstances are demonstrated. Controls may be imposed to ensure that such facilities do genuinely serve the waste management needs of Oxford.

Temporary waste management facilities will be permitted at mineral working and landfill sites where the waste development is related to and will be removed on completion of the mineral working or landfill operation.

| SA Objectives | Option | Summary and mitigation measure |
|---|---|---|
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | + | Locating development in previously developed land and derelict sites will reduce use of greenfield land which can have a positive impact on biodiversity. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | +/? | Use of previously developed sites and derelict land can improve the local landscape; however, allowing small scale development in the AONB could have some negative impacts on the landscape. However, such development is required to be in line with the objectives of the designation. |
| 3. To maintain and improve ground and surface water quality | ? | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | ? | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | ? | |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | ? | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | + | Allowing small scale facilities in the AONB and Greenbelt to serve local need would reduce the need to transport material from such localities. |
| 8. To minimise the 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 | + | Use of previously developed land and derelict land can lead to restoration of land especially where land may have been previously contaminated. |

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| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | 0 | |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | 0 | |

**Summary** –

Policy W6 provides guidance on sites for waste management facilities. It requires developers to prioritise land that is already in permanent waste management or industrial use, is previously developed, derelict or underused, involves existing agricultural buildings and their cartilages and adjoins sewage treatment works or other compatible development. This policy also allows small scale development within AONB to serve local need and may allow facilities in the Green Belt to serve the needs of Oxford. This policy has potential for indirect positive impacts on protection of nature conservation by promoting use of previously developed land thereby reducing development of green field land which is likely to host local biodiversity. Use of derelict buildings and development of previously developed sites can also help improve local landscape and visual impacts. However, proposals for small scale facilities in the AONB and Green Belt may have negative impacts on the landscape. The supporting text to Policy W6 states that proposals in AONB would need to be in keeping with the designations objectives. This would help mitigate against potential adverse impacts. Allowing small scale facilities in the AONB and facilities to serve Oxford in the Green Belt can help reduce the distances waste is transported therefore reducing ghg emissions and negative road transportation impacts. Use of previously developed land and derelict land especially where sites may have been previously contaminated can help to restore land quality and therefore policy W6 supports SA objective 9.

**Policy W7: Landfill**

Provision will be made for additional landfill capacity for inert (construction, demolition and excavation) waste which cannot be recycled, at quarries that require infilling for restoration. Permission will normally be granted for disposal of inert waste where it is required for the restoration of mineral workings or where there would be overall environmental benefit.

Permission will not be granted for new landfill sites for non-hazardous waste. Existing non-hazardous landfill capacity will be safeguarded for the disposal of residual non-hazardous waste. Permission will normally be granted to extend the life of existing non-hazardous landfill sites where this is necessary to meet the need for disposal of residual non-hazardous waste or to enable completion and restoration of the landfill.

Landfill sites should be restored in accordance with policy M6 for restoration of mineral workings.

| SA Objectives | Option | Summary and mitigation measure |
|---|---|---|
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | ? | Impacts will depend on exact location of sites. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | ? | Impacts will depend on exact location of sites. |
| 3. To maintain and improve ground and surface water quality | ? | Impacts will depend on exact location of sites. |
| 4. To improve and maintain air quality to levels which do not damage natural systems | ? | Impacts will depend on exact location of sites. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | ? | Impacts will depend on exact location of sites relative to sources of waste arising |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | ? | Impacts will depend on exact location of sites. |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | Impacts will depend on exact location of sites relative to sources of waste arising |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | ? | Impacts will depend on exact location of sites relative to sources of waste arising |
| 9. To protect, improve and where necessary restore land and soil quality | + | Provision for additional landfill capacity for inert waste where used to restore sites has a positive effect on SA objective 9 |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | - | Landfilling is the option of last resort and it does not contribute towards moving waste up the hierarchy. However, it is recognised that it should be adequately provided for. |

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| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | + | Making local provision allows for county self-sufficiency. It also offers potential for local job-opportunities. |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | + | |

**Summary** –

The Council estimates that an additional 3 million cubic metres of capacity for disposal of inert waste that cannot be recycled will be required from around 2020. To meet this need, the Council proposes to make provision for this amount with priority given to use of inert waste to restore mineral workings. Permission will not be granted for new landfill sites for non-hazardous waste and existing non- hazardous landfill capacity will be safeguarded for disposal of residual non-hazardous waste. Policy W5 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.

Landfilling of non-inert waste is restricted to residual waste which is expected to decrease with time as more waste is recycled and treated, this will lead to future increases in waste diverted from landfill which will have a positive impact on SA objective 10 (in the longer-term). Providing for inert landfill especially for restoration purposes is assessed as having positive effects on improving land quality (SA objective 9). Policy W7 also supports county self-sufficiency.

The potential transport and climate mitigation impacts of the proposed approach are difficult to assess without knowing the location of sites. This should be addressed during site selection to ensure that sites are located close to sources of arisings. Other potential impacts on the built and natural environment should also be assessed in detail during site selection to mitigate against adverse effects.

| **Policy W8: Hazardous**<br><br>Permission will only be granted for facilities for the management of hazardous waste where: they are designed to meet a requirement for the management of waste produced in Oxfordshire; and they are reasonably required to meet a need for waste management that is not adequately provided for elsewhere. | | |
|---|---|---|
| **Sustainability Appraisal Objectives** | | **Summary and mitigation measures** |
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | 0 | Proposals for hazardous landfilling would need to be assessed against strict Environmental agency landfilling criteria as well as planning criteria to ensure no adverse environmental impacts |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | 0 | |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | Proposals for hazardous landfilling would need to be assessed against strict Environmental agency landfilling criteria as well as planning criteria to ensure no adverse environmental impacts |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | +/-/? | Policy W8 supports applications for the management of hazardous waste produced in Oxfordshire – this would reduce the distances waste is transported as well as the associated ghg emissions. However, there will still be hazardous waste from Oxfordshire being managed elsewhere (although quantities are generally not expected to be significant). |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | Proposals for hazardous landfilling would need to be assessed against strict Environmental agency landfilling criteria as well as planning criteria to ensure no adverse environmental impacts |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | +/-/? | Policy W8 supports applications for the management of hazardous waste produced in Oxfordshire – this would reduce the distances waste is transported as well as the associated transportation impacts. However, there will still be some hazardous waste from Oxfordshire being managed elsewhere (although quantities are generally not expected to be significant). |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | 0 | Proposals for hazardous landfilling would need to be assessed against strict Environmental agency landfilling criteria as well as planning criteria to ensure no adverse environmental impacts including on the local community |

| **Policy W8: Hazardous**<br><br>Permission will only be granted for facilities for the management of hazardous waste where: they are designed to meet a requirement for the management of waste produced in Oxfordshire; and they are reasonably required to meet a need for waste management that is not adequately provided for elsewhere. | | |
|---|---|---|
| **Sustainability Appraisal Objectives** | | **Summary and mitigation measures** |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | Proposals for hazardous landfilling would need to be assessed against strict Environmental agency landfilling criteria as well as planning criteria to ensure no adverse environmental impacts |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | 0/? | Impact is dependent on the management route applied to the hazardous waste (treatment or disposal). |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | +/- | Policy W8 supports self-sufficiency and encourages facilities that are designed to deal with waste arising in Oxfordshire. However, it does not provide for self-sufficiency due to the specialist nature of hazardous waste management facilities. |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | 0 | |
| **Summary** –<br>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 hazardous waste management facilities, they currently tend to serve large catchment areas than a single county. Oxfordshire estimates that additional capacity could be required for approximately 50,000tpa of hazardous waste produced in the county. Policy W8 does not 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. This policy largely represents the 'Business as usual' scenario where Oxfordshire remains a net exporter of hazardous waste although it has potential for some minor positive impacts on transport related and ghg reduction impacts where facilities are provided locally. However, there will also be some minor negative impacts (transport related/ghg emissions) related to the export of some hazardous waste. Generally, the quantities of hazardous waste to be managed are expected to be relatively small and so the impacts (both positive and negative) are judged as likely to be minor. When considering planning applications for hazardous waste management facilities, potential impacts on the built and natural environment should be assessed in detail to mitigate against adverse effects. It is also expected that such applications would be assessed the Environmental Agency's hazardous waste management regulations/criteria. | | |

**Policy W9: Radioactive Waste Storage**

Provision will be made for: storage of intermediate level radioactive nuclear legacy waste from sites in Oxfordshire at Harwell, pending removal to a national disposal facility; temporary storage (if required) of low level radioactive nuclear legacy waste at Harwell and Culham. Broad locations that are proposed for strategic waste facilities are identified in the key diagram. Permission will only be granted for the management or disposal of low level radioactive waste at existing landfill sites or at a new bespoke facility at Harwell if it can be demonstrated that no other suitable disposal facility is available and there is an overriding need to dispose of the waste in Oxfordshire.

| **Sustainability Appraisal Objectives** | | | **Summary and mitigation measures** |
|---|---|---|---|
| | **Intermediate level- long term storage at Harwell pending transfer to a national disposal facility** | **Low level - Temporary storage at Harwell and Culham** | |
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | ? | ? | There are no specific designated sites within the Harwell site; however there is a SSSI 7km to the south east of the site.<br><br>There are no designated nature conservation sites within the Culham site or close to the site.<br><br>For both sites, detailed potential impacts on local biodiversity should be undertaken at the planning application stage to ensure no adverse effects on local wildlife and habitats. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | ? | ? | The Harwell site borders the North Wessex Downs AONB. Development here should be designed to fit into the surrounding landscape without causing negative impacts on the AONB as well as the local landscape.<br><br>There are also 17 Scheduled Monuments within 5kms of the site. Potential impacts on these should be assessed at the planning application stage.<br><br>The Culham site is 2.5 km from the North Wessex Downs AONB and is in the Greenbelt. There is a Scheduled Monument site 1km east of the site. Proposals should demonstrate that development of a storage facility would not have adverse impacts on the landscape and the Scheduled Monument. |

**Policy W9: Radioactive Waste Storage**

Provision will be made for: storage of intermediate level radioactive nuclear legacy waste from sites in Oxfordshire at Harwell, pending removal to a national disposal facility; temporary storage (if required) of low level radioactive nuclear legacy waste at Harwell and Culham. Broad locations that are proposed for strategic waste facilities are identified in the key diagram. Permission will only be granted for the management or disposal of low level radioactive waste at existing landfill sites or at a new bespoke facility at Harwell if it can be demonstrated that no other suitable disposal facility is available and there is an overriding need to dispose of the waste in Oxfordshire.

| **Sustainability Appraisal Objectives** | | | **Summary and mitigation measures** |
|---|---|---|---|
| | **Intermediate level- long term storage at Harwell pending transfer to a national disposal facility** | **Low level - Temporary storage at Harwell and Culham** | |
| 3. To maintain and improve ground and surface water quality | ? | ? | The River Thames is close to both the Harwell Culham sites. For both sites, the ecological quality of the river (near the sites) is considered poor and the chemical status good. Ground water contamination is present at Harwell and remediation work continues.<br><br>Development proposals for storage of radioactive waste should demonstrate that development would not lead to a deterioration of the surface water quality (as well as ground water quality). |
| 4. To improve and maintain air quality to levels which do not damage natural systems | ? | ? | Development at the Harwell and/or Culham sites should ensure that air quality levels which do not damage natural systems are maintained. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | - | + | For intermediate level waste, Policy W9 would lead to radioactive waste being transported from Culham although the impact on ghg emissions is judged to be minor due to the short distance travelled and small quantities of waste involved.<br><br>For low level waste – Policy W9 would lead to waste being treated where it arises reducing the need for transportation and associated ghg emissions. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | 0 | Both sites are not within high flood risk areas. |

**Policy W9: Radioactive Waste Storage**

Provision will be made for: storage of intermediate level radioactive nuclear legacy waste from sites in Oxfordshire at Harwell, pending removal to a national disposal facility; temporary storage (if required) of low level radioactive nuclear legacy waste at Harwell and Culham. Broad locations that are proposed for strategic waste facilities are identified in the key diagram. Permission will only be granted for the management or disposal of low level radioactive waste at existing landfill sites or at a new bespoke facility at Harwell if it can be demonstrated that no other suitable disposal facility is available and there is an overriding need to dispose of the waste in Oxfordshire.

| **Sustainability Appraisal Objectives** | | | **Summary and mitigation measures** |
|---|---|---|---|
| | **Intermediate level- long term storage at Harwell pending transfer to a national disposal facility** | **Low level - Temporary storage at Harwell and Culham** | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | - | + | For intermediate level waste, Policy W9 would lead to radioactive waste being transported from Culham although the impact is judged to be minor due to the short distance travelled and small quantities of waste involved.<br><br>For low level waste – Policy W9 would lead to waste being treated where it arises reducing the need for transportation and associated impacts. |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on local amenity | ? | ? | Both sites area associated with some radioactive discharges to the environment and this are monitored to ensure they do not exceed permitted limits. Development of storage facilities would be required to demonstrate that these discharge limits would not be exceeded. |
| 9. To protect, improve and where necessary restore land and soil quality | ? | ? | There is a degree of land contamination at Harwell. Development on this site should demonstrate that it would not lead to adverse impacts on land quality. There is no contaminated land identified at Culham. However, development proposals would be required to demonstrate that they would not lead to contamination of land. |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | 0 | 0 | Policy W9 relates to storage of radioactive waste. |

| **Policy W9: Radioactive Waste Storage**<br>Provision will be made for: storage of intermediate level radioactive nuclear legacy waste from sites in Oxfordshire at Harwell, pending removal to a national disposal facility; temporary storage (if required) of low level radioactive nuclear legacy waste at Harwell and Culham. Broad locations that are proposed for strategic waste facilities are identified in the key diagram. Permission will only be granted for the management or disposal of low level radioactive waste at existing landfill sites or at a new bespoke facility at Harwell if it can be demonstrated that no other suitable disposal facility is available and there is an overriding need to dispose of the waste in Oxfordshire. | | | |
|---|---|---|---|
| **Sustainability Appraisal Objectives** | | | **Summary and mitigation measures** |
| | **Intermediate level- long term storage at Harwell pending transfer to a national disposal facility** | **Low level - Temporary storage at Harwell and Culham** | |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | + | + | Policy W9 would allow Oxfordshire to be self-sufficient in meeting its radioactive waste storage needs. |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | + | + | Policy W9 is supportive of SA objective 12 as it offers scope for creation of new jobs. |

**Policy W9: Radioactive Waste Storage**

Provision will be made for: storage of intermediate level radioactive nuclear legacy waste from sites in Oxfordshire at Harwell, pending removal to a national disposal facility; temporary storage (if required) of low level radioactive nuclear legacy waste at Harwell and Culham. Broad locations that are proposed for strategic waste facilities are identified in the key diagram. Permission will only be granted for the management or disposal of low level radioactive waste at existing landfill sites or at a new bespoke facility at Harwell if it can be demonstrated that no other suitable disposal facility is available and there is an overriding need to dispose of the waste in Oxfordshire.

| **Sustainability Appraisal Objectives** | | | **Summary and mitigation measures** |
|---|---|---|---|
| | **Intermediate level- long term storage at Harwell pending transfer to a national disposal facility** | **Low level - Temporary storage at Harwell and Culham** | |

**Summary:**

Policy W9 relates to the management of Radioactive waste (intermediate and low level radioactive waste).

**Intermediate level radioactive** waste is produced at Harwell and smaller quantities at Culham. There is a requirement for treatment and storage of an estimated 10,000 cubic metres of intermediate level radioactive waste. Policy W9 proposes storage at of this waste at Harwell (from Harwell and Culham), pending removal to a national disposal facility. This would lead to some waste from Culham being transported to Harwell. Although assessed as a negative impact against SA objectives on transport and climate change, this impact is likely to be minor due to the distance travelled (approximately 7miles) and the quantities of waste moved (expected to be small). The SA has identified the following sustainability issues that will need to be considered when dealing with applications for such a facility at Harwell:

- Potential impact on local biodiversity including a SSSI 7 kms to the south east of the site
- The close proximity to the North Wessex Downs AONB as well as potential local visual and landscape impacts
- Potential impacts on Scheduled monuments identified close to the site (within 5kms)
- Potential for ground water and surface water contamination
- Potential for land contamination
- Potential amenity and health impacts associated with management of intermediate le

**Low Level radioactive waste**: It is estimated that a total of 100,000 cubic metres of low level radioactive waste mainly arising from demolition and clearance of buildings at Harwell and Culham will be required. Policy W9 proposed temporary storage of this type of waste at both Harwell and Culham. When assessed against the SA objective policy W9 would lead to the least movement of low level radioactive waste as material will be stored where it is generated and therefore the policy performs well against SA objectives 5 and 7. The following key issues would need to be considered when assessing the potential development of storage facilities at Harwell and Culham:

Harwell: (as listed above for intermediate level radioactive waste)

Key issues that should be considered at Culham include:

- Potential impacts on local site biodiversity (there are no designated sites close to or within the site)
- Potential impacts on the AONB and Scheduled Monument site identified 1km east of the site
- Potential impacts on surface and ground water
- Potential amenity and health impacts

| **Policy W10: Safeguarding**<br>Existing and proposed permanent waste management sites will be safeguarded for waste management use. Proposals for other development that would prevent or prejudice the use of safeguarded site for waste management will not normally be permitted unless either provision for new waste management capacity is made at a suitable alternative location or it can be demonstrated that the site is no longer needed or suitable for waste management use. | | |
|---|---|---|
| **Sustainability Appraisal Objectives** | | **Summary and mitigation measures** |
| 1. To protect, maintain and enhance Oxfordshire's biodiversity and geodiversity including natural habitats and protected species | 0 | |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | 0 | |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | 0/+ | Safeguarded sites can help to ensure that there are suitable sites within Oxfordshire for waste management allowing for waste to be managed within the county and therefore reducing the distances waste is transported for management. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0/+ | Safeguarded sites can help to ensure that there are suitable sites within Oxfordshire for waste management allowing for waste to be managed within the county and therefore reducing the distances waste is transported for management. |
| 8. To minimise the negative impacts of waste management facilities and mineral extraction on people and local communities | 0 | |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |

| **Policy W10: Safeguarding**<br>Existing and proposed permanent waste management sites will be safeguarded for waste management use. Proposals for other development that would prevent or prejudice the use of safeguarded site for waste management will not normally be permitted unless either provision for new waste management capacity is made at a suitable alternative location or it can be demonstrated that the site is no longer needed or suitable for waste management use. | | |
|---|---|---|
| **Sustainability Appraisal Objectives** | | **Summary and mitigation measures** |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire | 0 | |
| 11. To enable Oxfordshire to be self-sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment. | + | Safeguarding sites can indirectly contribute to self-sufficiency by making sure there are available suitable sites for waste management development within the county. |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county | 0 | |
| **Summary** –<br>Policy W11 relates to the safeguarding of waste management sites against other forms of development. This policy does not impact on most SA objectives as it specifically seeks to ensure that ensuring that safeguarded sites are not lost to other development. It is however assessed as having a positive indirect impact on SA objective 11 on enabling Oxfordshire to be self-sufficient in its waste management. This is because policy W11 would ensure that there are available sites within Oxfordshire suitable for waste management uses which provide potential developers with local site alternatives which in turn would lead to facilities being developed within Oxfordshire close to the source of waste arising. This would in turn have potential for indirect positive impacts on SA objectives 5 and 7 on reducing ghg emissions and transport related impacts. | | |

## Common Core Policies

**Policy C1: Flooding**

**Minerals and waste development will, wherever possible, take place in areas that are not at risk of flooding. Where development takes place in an area of identified flood risk this should only be where alternative locations in areas of lower flood risk have been explored and discounted,**
**and where a flood risk assessment is able to demonstrate that the development will not:**

- **impede the flow of floodwater;**
- **displace floodwater and increase the risk of flooding elsewhere;**
- **reduce existing floodwater storage capacity;**
- **adversely affect the functioning of existing flood defence structures.**

**Proposals for the restoration of quarries located in areas liable to flood should, where possible, incorporate measures for the storage of floodwater.**

| Sustainability Appraisal objectives | Option 1 | Comments |
|---|---|---|
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | ++ | Ensuring that waste development will not increase flood risk has potential short and long term positive impact on protecting biodiversity. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | + | Ensuring that waste development does not increase flood risk or even reduces flood risk, has the potential to protect landscape character and historic built heritage structures which might otherwise be damaged by floodwaters. |
| 3. To maintain and improve ground and surface water quality | ++ | Ensuring that waste development does not increase flood risk or even reduces flood risk will help to maintain surface/ground water quality which might otherwise be subject to pollution from increased volumes and rates of run-off. |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | 0 | |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | + | This policy addresses flood risk vulnerability although it does not explicitly take account of climate change and appropriate adaptation. It would be appropriate to address climate change adaptation within the policy wording. |

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| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | ++ | This policy will have a positive long term effect on local communities to the extent that it ensures that waste developments do not increase flood risk, and provide opportunities to reduce existing flood risk which may be experienced by local communities. |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | 0 | |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | + | The policy is likely to have a minor indirect positive effect on the economy as the prevention of flood risk supports economic growth by maintaining business continuity. |
| Summary<br>Policy C1 will have positive effects on a number of the SA objectives insofar as it protects valued habitats, flora and fauna, built heritage, landscapes, valuable agricultural land, local communities and businesses from damage, disruption and distress caused by flood events. However the sustainability of the policy in relation to SA objective 6 could be improved by reference to the future predicted impacts of climate change and the incorporation of adaptation measures to account for this, including any likely increased flood risk. | | |

**Policy C2: Water Environment**

**Minerals and waste development will need to demonstrate that there would be no unacceptable adverse impact on or risk to:**

- **The quantity or quality of surface or groundwater resources;**
- **The quantity or quality of water abstraction currently experienced by water abstractors unless acceptable alternative provision can be made;**
- **The flow of groundwater at or in the vicinity of the site.**

**Proposals for minerals and waste development should ensure the protection of watercourses and canals of significant landscape, nature conservation or amenity value.**

| Sustainability Appraisal objectives | Option 1 | Comments |
|---|---|---|
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | ++ | This policy has a positive impact on biodiversity in that it will assist to protect sensitive biodiversity from changes in the chemical composition of water systems and availability of groundwater. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | + | To the extent that surface/ground waters contribute to landscape character (e.g. by sustaining certain species of trees, use of canals etc), protection of the quantity/quality of these waters through this policy should have a positive long term effect on landscape character and heritage features. |
| 3. To maintain and improve ground and surface water quality | ++ | The policy directly and positively addresses ground and surface water quality. |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | 0 | |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | + | Groundwater flows can have an impact on flood risk, so addressing adverse impacts or risks to groundwater flows has a long term positive impact in relation to this objective. |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |

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| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | + | The policy also recognizes the amenity values of maintaining water quality. |
| 9. To protect, improve and where necessary restore land and soil quality | + | Maintenance of ground and surface water flows will have a positive impact on protecting the functioning of high grade agricultural land and other soils. |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | 0 | |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | ++ | To the extent that the economy relies on water supplied from surface and groundwater to function and grow, it is important to protect these resources, which the policy sets out to do. |
| **Summary**<br>Policy C2 has a positive impact on many of the SA objectives, as water quality and quantity are an essential precursor to the proper functioning of ecosystems, landscapes, businesses and local communities. | | |

| **Policy C3: Environmental and Amenity Protection**<br><br>**Proposals for minerals and waste development should demonstrate that they will not have an unacceptable adverse impact on the environment, residential amenity and other sensitive receptors.** | | |
|---|---|---|
| **Sustainability Appraisal objectives** | **Option 1** | **Comments** |
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | + | The policy seeks to protect the environment from unacceptable adverse impacts. The 'environment' encompasses biodiversity and geodiversity although the policy could be more explicit about what is included in the 'environment' and provide some guidance as to what might constitute an "unacceptable adverse impact".<br>It is appreciated that biodiversity and geodiversity is covered by Policy C4 – it would be useful to provide a cross reference to this policy. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | + | The policy seeks to protect the environment and other sensitive receptors from unacceptable adverse impacts. The 'environment' and 'other sensitive receptors' can be construed to include landscape character and historic and built heritage but it would be helpful if the policy could be more explicit in this respect, and provide some guidance as to what might constitute an "unacceptable adverse impact".<br>It is appreciated that landscape character is covered by Policy C5 and the historic environment and archaeology by Policy C6 – it would be useful to provide a cross reference to these policies. |
| 3. To maintain and improve ground and surface water quality | + | The policy seeks to protect the environment and other sensitive receptors from unacceptable adverse impacts. The 'environment' and 'other sensitive receptors' can be construed to include ground and surface water. It is appreciated that ground and surface water quality is covered by Policy C2 – it would be useful to provide a cross reference to this policy. |
| 4. To improve and maintain air quality to levels which do not damage natural systems | + | The policy seeks to protect the environment and other sensitive receptors from unacceptable adverse impacts. The 'environment' and 'other sensitive receptors' can be construed to include air quality. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | + | An indirect positive effect on this SA objective is expected as a result of the fact that the impact of air emissions on sensitive receptors is covered by the policy. This is mentioned in the supporting text although not explicitly in the policy text. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | + | An indirect positive effect on this SA objective can be expected as a result of the fact that protecting the natural functioning of the environment, including river systems, should ensure these systems can absorb future flood events. |

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| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | + | The supporting text indicates that the potential impact of noise, dust, odour, other air emissions, vibration, vermin and litter which might arise from minerals transportation will be assessed. However the policy would be strengthened by explicit mention of these potential impacts and that transportation of materials can also lead to some of these impacts (i.e. that 'development' includes transportation). |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | + | The policy directly aims to address the negative impacts of minerals extraction on local communities. However it could be strengthened by explicit reference in the policy text to the types of impacts that will be considered, and that potential impacts on human health, not just residential amenity, will be considered. |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | 0 | |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | + | The policy seeks to protect the environment and other sensitive receptors from unacceptable adverse impacts. The 'environment' and 'other sensitive receptors' can be construed to include local businesses and jobs (which includes employment in for example, the tourism/agricultural sector which would be sensitive to minerals development) but it would be helpful if the policy could be more explicit in this respect, and provide some guidance as to what might constitute an "unacceptable adverse impact". |

Policy C3 seeks to protect the environment, residential amenity and other sensitive receptors from unacceptable adverse impacts. The 'environment' and 'other sensitive receptors' can be construed to include those SEA elements covered by the SA objectives, including biodiversity, landscape character and historic and built heritage, air and water; but it would be helpful if the policy could be more explicit in defining what constitutes the 'environment' or a 'sensitive receptor' in order to give more guidance to developers. It would also be helpful to provide some guidance as to what might constitute an "unacceptable adverse impact". In addition, the potential impacts on human health, not just residential amenity should be considered (to comply with the SEA Directive requirements to consider effects on human health as captured by SA objective 8), and it might also be appropriate to consider local businesses as sensitive receptors, particularly where such businesses are dependent on a high quality environment and good amenity (e.g. tourism sector). A cross reference in the supporting text to the Common Core Policies which deal with distinct elements of the 'environment' would also be helpful – for example highlighting linkages to Policy C2 for ground and surface water, Policy C4 for Biodiversity and Geodiversity, Policy C5 for Landscape and Policy C6 for the Historic Environment and Archaeology.

**Policy C4: Biodiversity and Geodiversity**

**Proposals for minerals and waste development should demonstrate that the development will not have an unacceptable adverse impact on sites designated as internationally, nationally or locally important for nature conservation, including the Oxfordshire Conservation Target Areas and the setting of those areas.**

**Mineral working and waste management development should not damage or destroy irreplaceable habitats or biodiversity, including ancient woodland and species rich grassland.**

**The County Council will seek the enhancement of Conservation Target Areas to implement Oxfordshire Biodiversity Action Plan (BAP) targets within and close to areas of mineral working. Mineral extraction will not be permitted unless the long term maintenance of BAP Priority Habitats and appropriate contributions to Oxfordshire BAP targets through the Conservation Target Area approach have been secured.**

**Nationally and regionally important geological features including geological Sites of Special Scientific Interest and Regionally Important Geological and Geomorphological Sites should be protected from harmful development and retained in situ unless there are exceptional reasons justifying their removal, in which event their presence should be appropriately recorded.**

| **Sustainability Appraisal objectives** | **Option 1** | **Comments** |
|---|---|---|
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | ++ | This policy directly addresses biodiversity/ geodiversity and will have a very positive long term impact on the attainment of this objective. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | ++ | The protection and enhancement of natural habitats and valued geological features will have a positive long term impact on protecting landscape character, as these habitats and geological features are a major component of the local landscape character. |
| 3. To maintain and improve ground and surface water quality | ++ | Conservation and restoration of natural habitats will indirectly assist to maintain and improve water quality over the long term as these habitats provide vital ecosystem services, including maintaining the proper functioning of the water cycle. |
| 4. To improve and maintain air quality to levels which do not damage natural systems | ++ | Conservation and restoration of natural habitats will indirectly assist to maintain and improve air quality over the long term as these habitats provide vital ecosystem services, including maintaining air quality through filtering of pollutants and capture of $CO_2$. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | ++ | Conservation and restoration of natural habitats will indirectly assist to reduce GHG emissions as these habitats provide vital ecosystem services, including the capture of $C0_2$, an important GHG. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | ++ | Conservation and restoration of natural habitats will indirectly assist to reduce flood risk as these habitats provide vital ecosystem services, including maintaining the proper functioning of the water cycle and absorbing run-off. |

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| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | ++ | Enhancement of Conservation Target Areas and protection of valued habitats/geological features will have an indirect long term beneficial impact on people and local communities - by providing ecosystem services that function properly – i.e. providing clean air and water and fertile soils and thus sustaining communities and the economy; and by providing access to the natural environment for recreation and by enhancing nature – which has an impact on general well-being and mental health. |
| 9. To protect, improve and where necessary restore land and soil quality | ++ | Conservation and enhancement of natural habitats will assist to restore land and soil quality as these habitats provide vital ecosystem services, including providing the appropriate nutrients to restore soil quality and prevent loss of soils through flooding/run-off. |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | 0 | |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | ++ | Enhanced Conservation Target Areas and protected natural habitats/geological features indirectly support economic growth – by providing opportunities for employment through industries such as tourism, agriculture and arboriculture; providing essential ecosystem services; and maintaining well-being and health of employees through access to natural areas and opportunities for active recreation in these areas. |
| **Summary**<br>Policy C4 will have a positive impact on many of the SA objectives – as the protection of biodiversity provides many direct and indirect benefits for other SEA elements. Biodiversity/geodiversity features are essential elements of landscape character and quality. The proper functioning of ecosystem services which are provided by the flora and fauna resident within Conservation Target Areas will have long term positive impacts on air, water, soil, human health and the economy. Other long term benefits include reduced flood risk and carbon capture. | | |

| **Policy C5: Landscape**<br><br>**Proposals for minerals and waste development should demonstrate that the development will protect and where possible enhance the landscape quality of Oxfordshire and will take account of the landscape character areas identified in the Oxfordshire Wildlife and Landscape study.**<br>**Appropriate measures should be taken to mitigate potential adverse visual impacts through siting, design and landscaping.** | | |
|---|---|---|
| **Sustainability Appraisal objectives** | **Option 1** | **Comments** |
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | ++ | The protection and enhancement of landscape character will indirectly help to protect natural habitats and geological features, as these habitats and geological features are a major component of the local landscape character. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | ++ | This policy directly addresses the landscape character element of this SA objective and will have a very positive impact on the attainment of this objective. |
| 3. To maintain and improve ground and surface water quality | + | This policy should indirectly have a positive impact on improving ground and water quality, as landscape character includes such water features. |
| 4. To improve and maintain air quality to levels which do not damage natural systems | + | This policy should indirectly have a positive impact on air quality, as protection of landscape character includes those natural habitats which make up that landscape character and which provide ecosystem services, including the maintenance of air quality. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | + | This policy should indirectly have a positive impact on reducing GHG emissions, in that protection of landscape character includes the natural habitats which make up that landscape character, and these natural habitats provide ecosystem services, including carbon capture. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | + | This policy should indirectly have a positive impact on flood risk, in that protection of landscape character includes the natural habitats which make up that landscape character, and these natural habitats provide ecosystem services, including maintaining the water cycle and reducing run-off rates and flows. |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | + | This policy should indirectly have a positive impact on local communities, in that protection of landscape character in turn provides protection of local amenity and addresses any adverse visual effects for residents. |

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| 9. To protect, improve and where necessary restore land and soil quality | + | This policy should indirectly have a positive impact on soil quality in that protection of landscape character includes the natural habitats which make up that landscape character, and these natural habitats provide ecosystem services, including providing the appropriate nutrients to restore soil quality and prevent loss of soils through flooding/run-off. |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | 0 | |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | + | Protection of landscape quality indirectly supports economic growth – by providing opportunities for employment through industries such as tourism; providing essential ecosystem services through the habitats protected within these landscapes; and maintaining well-being and health of employees through access to high quality natural areas and opportunities for active recreation in these areas. |
| **Summary**<br>Policy C5 will have a positive impact on many of the SA objectives – as the protection of landscape quality and character provides many direct and indirect benefits for other SEA elements. For example the proper functioning of ecosystem services which are provided by the flora and fauna resident within these landscape features will indirectly but positively impact over the long term on air, water, soil, human health and the economy, and provide such benefits such as reduced flood risk and carbon capture. | | |

| **Policy C6: Historic environment and archaeology**<br><br>**Proposals for minerals and waste development will be considered in the light of the need to protect and conserve Oxfordshire's historic assets and the setting of those assets, including Blenheim Palace, scheduled ancient monuments, listed buildings, conservation areas, historic battlefields, and registered parks and gardens.**<br><br>**Scheduled Ancient Monuments, other archaeological remains of national importance and their settings should be preserved in situ. For all other remains of regional or local importance preservation in situ will be preferred; where this is not appropriate, and for all other remains, adequate provision should be made for their excavation and recording.** | | |
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| **Sustainability Appraisal objectives** | **Option 1** | **Comments** |

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| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | + | Insofar as protection of the setting of historic features and built heritage also provides for the protection of biodiversity, including species which are resident within these features, the policy has an indirect positive impact on biodiversity/geodiversity. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | ++ | This policy directly addresses the historic/built heritage element of this SA objective and will have a very positive impact on the attainment of this objective. |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | 0 | |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | 0 | |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | 0 | |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | + | Insofar as the protection of historic features and built heritage also provides for the protection of local amenity and valued assets for recreation and relaxation, the policy has an indirect positive impact on local communities. |
| 9. To protect, improve and where necessary restore land and soil quality | 0 | |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | 0 | |

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| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | + | Insofar as the protection of historic features and built heritage also protects valued assets for recreation and relaxation and the development of tourism related economic activity, the policy has an indirect positive impact on the economy. |
| **Summary**<br>Policy C6 has a positive impact on SA objective 2 as it relates to the protection of the historic and built heritage. It also has indirect positive impacts on a number of the other SEA elements, in particular landscape character, biodiversity and the economy. There is no direct relationship between this policy and the other SA objectives. | | |

**Policy C7: Transport**

**Minerals and waste development will only be permitted where provision is made for convenient access to and along the strategic road network in a way that maintains or improves:**

- **the safety of all road users including pedestrians;**
- **the efficiency and quality of the road network;**
- **residential and environmental amenity.**

**Proposals for mineral working should:**
**a) wherever possible, transport minerals by rail, water, pipeline or conveyor, rather than by road;**
**b) minimise the number of miles that have to be travelled to reach markets if this can be achieved using roads suitable for lorries.**

| Sustainability Appraisal objectives | Option 1 | Comments |
|---|---|---|
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | ++ | Transportation that maintains or improves environmental amenity should have a positive impact on biodiversity, in that some species are sensitive to the dust, vibration and noise of traffic and reduction of these impacts will be positive. |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | ++ | Transportation that maintains or improves environmental amenity should have a positive impact on landscape character and built heritage. Dust, vibration and traffic noise can disrupt the serenity of landscape character and busy roads result in visual intrusion. Dust and vibration can have negative impacts on sensitive built structures, which are also sensitive to air pollution from transport emissions. Reduction of these impacts will be positive. |
| 3. To maintain and improve ground and surface water quality | + | This policy will help to reduce the temporary adverse impacts on surface water which can arise from contaminated dust on roads from the transportation of minerals causing pollution through runoff. |

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|---|---|---|
| 4. To improve and maintain air quality to levels which do not damage natural systems | ++ | Locating waste facilities in a way that improves residential amenity and environmental quality can improve air quality, as a result of reduced air emissions from waste related traffic. Improving the efficiency and quality of the road network should also have a positive effect by reducing congestion, and thus the higher levels of emissions associated with slow moving traffic. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | + | Improving the efficiency and quality of the road network has potential for positive impacts on ghg emissions by reducing congestion, and thus the higher levels of emissions associated with slow moving traffic. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | ++ | This policy directly addresses this SA objective and will have a very positive impact on the attainment of this objective to the extent that it is deliverable. |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | ++ | This policy will have a very positive impact on minimising impacts on local communities of new waste management facilities as it seeks to address the transportation impacts of such development (through addressing residential amenity and road safety). |
| 9. To protect, improve and where necessary restore land and soil quality | + | This policy will help to reduce the adverse impacts on soil quality which can arise from contaminated dust from the transportation of waste, including runoff from road surfaces. |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | | |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | ++ | The policy will assist to support Oxfordshire's economic growth by providing the necessary and appropriate infrastructure to ensure that waste is sustainably transported to waste management facilities.<br>It should also assist to ease further congestion which has an impact on businesses reliant on road transport. |

Summary

Transportation of waste that maintains or improves environmental and residential amenity has potential for positive impacts on biodiversity, landscape character and built heritage, local communities, businesses and sensitive biodiversity/soil/water features in the vicinity of roads used by waste traffic. Reducing the number of road miles travelled to reach waste management sites and addressing congestion through an efficient road network is likely to have a positive impact on SA objectives for air quality and greenhouse gas emissions, as a result of subsequently reduced air emissions from waste traffic, as well as facilitating the efficient functioning of those businesses that rely on the road network.

**Policy C8: Rights of Way**

**The integrity of the rights of way network should be maintained and if possible retained in situ. Diversions should be safe, attractive and convenient and, if temporary, should be reinstated as soon as possible. If permanent diversions are required, these should seek to enhance and improve the public rights of way network. Improvements and enhancements to the rights of way network will be encouraged and public access will be sought to restored mineral workings, especially if this can be linked to wider provision of green infrastructure.**

| Sustainability Appraisal objectives | Option 1 | Comments |
|---|---|---|
| 1. To protect, maintain, and enhance Oxfordshire's biodiversity and geodiversity including natural habitats, flora and fauna and protected species | 0 | |
| 2. Protect and enhance landscape character, local distinctiveness and historic and built heritage | + | Improved public access can indirectly assist with the enhancement of landscape character and the settings of historic/built heritage. |
| 3. To maintain and improve ground and surface water quality | 0 | |
| 4. To improve and maintain air quality to levels which do not damage natural systems | + | Enhancements to the public rights of way network could have an indirect positive effect on improving air quality by encouraging people to make local trips on foot or bicycle where such improvements are provided. |
| 5. To reduce greenhouse gas emissions to reduce the cause of climate change | + | Enhancements to the public rights of way network could have an indirect positive effect on reducing GHG emissions by encouraging people to make local trips on foot or bicycle where such improvements are provided. |
| 6. To mitigate Oxfordshire's vulnerability to flooding, taking account of climate change | 0 | |

| | | |
|---|---|---|
| 7. To minimise the impact of transportation of aggregates and waste products on the local and strategic road network | + | Enhancements to the public rights of way network could have an indirect positive effect by encouraging people to make local trips on foot or bicycle where such improvements are provided, reducing traffic conflicts on local roads. |
| 8. To minimise negative impacts of waste management facilities and mineral extraction on people and local communities | ++ | The policy provides opportunities for long term enhancement of local amenity and improved access to the countryside, as well as improvements to the health of local people through increased opportunities for physical recreation. |
| 9. To protect, improve and where necessary restore land and soil quality | + | Improvements to the public right of way system may result in minor positive impacts on soil quality, by preventing soil erosion from unmanaged recreational use in sensitive areas. |
| 10. To contribute towards moving up the waste hierarchy in Oxfordshire. | 0 | |
| 11. To enable Oxfordshire to be self sufficient in its waste management and to make a sustainable contribution to its sub-regional minerals apportionment | 0 | |
| 12. To support Oxfordshire's economic growth and reduce disparities across the county. | + | The policy provides long term opportunities for improved access to the countryside, as well as improvements to the health of local people through increased opportunities for physical recreation. Improved access provides business opportunities for local people and addresses disparities in health and well-being. |
| **Summary**<br>Enhancements to the public rights of way network should have a long term indirect positive effect on a number of the SA objectives, by encouraging people to make local trips on foot or bicycle, reducing traffic conflicts on local roads, reducing GHG emissions and improving local air quality, improving health through physical activity and generating business opportunities through recreation. Improved public access can also indirectly assist with the enhancement of landscape character and the settings of historic/built heritage. | | |