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Sustainability Appraisal of the Herefordshire Minerals and Waste Local Plan

Final Report
Prepared by LUC
August 2017

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Contents

Tables

Figures

1 Introduction

Introduction

1.1 This Sustainability Appraisal Report has been prepared by LUC on behalf of Herefordshire Council as part of the integrated Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) of the emerging Herefordshire Minerals and Waste Local Plan (HMWLP).

1.2 This SA Report relates to the Herefordshire Minerals and Waste Local Plan Issues and Options Report (2017) and it should be read in conjunction with that document.

Geographical context for the Herefordshire Minerals and Waste Local Plan

1.3 Herefordshire is a large, predominately rural, landlocked county situated in the south western corner of the West Midlands region, on the border with Wales. Herefordshire shares boundaries with five English local authorities (Worcestershire, Shropshire and Gloucestershire County Councils, and Malvern Hills and Forest of Dean District Councils) and three Welsh local authorities (Monmouthshire County Council, Powys County Council, and the Brecon Beacons National Park Authority).

1.4 The county area covers 217,973 hectares. High hill ranges, including the Malvern Hills and Black Mountains, encircle much of the county at its perimeter. Away from these areas, the landscape is one of gentle rolling hills, dissected by wide river valleys with lower-lying plains in the centre. River crossing points have provided a natural focus for the development of many settlements, with others dispersed across Herefordshire's rich and diverse landscape.

1.5 The meandering river valley landscape which is the county's principal geographical feature is that of the River Wye; which enters Herefordshire near the Welsh town of Hay-on-Wye, flowing east to Hereford before leaving the county at the Wye Gorge, downstream of Ross-on-Wye. Herefordshire contains parts of two protected landscapes of national importance: the Wye Valley and Malvern Hills Areas of Outstanding Natural Beauty (AONB).

1.6 At the county's heart is the city of Hereford which is the main centre for civil and ecclesiastical administration, health, education and leisure facilities, shopping and employment. The five market towns of Bromyard, Kington, Ledbury, Leominster and Ross-on-Wye surround the city. Outside these urban areas, villages and smaller settlements, farms and other isolated properties characterise much of Herefordshire.

1.7 Further baseline information is provided in **Chapter 3** of this SA Report.

Herefordshire Minerals and Waste Local Plan

1.8 Herefordshire Council is currently in the early stages of preparing a new Minerals and Waste Local Plan (Issues and Options stage). Once adopted, the Herefordshire Minerals and Waste Local Plan will replace the saved minerals and waste policies contained in the Herefordshire Unitary Development Plan. It will provide a clear vision, objectives and spatial strategy for minerals and waste up to 2031, consistent with that set out in the Herefordshire Local Plan Core Strategy 2011-2031 (adopted October 2015) ensuring that it provides sufficient opportunities to meet the identified needs of the area for waste management and a steady and adequate supply of all economically significant minerals in the Plan area. The Minerals and Waste Local Plan will also present the core principles for minerals and waste development, location specific policies in relation to where minerals and waste development should be developed, and development

management style policies addressing specific issues that each development proposal should address.

Sustainability Appraisal and Strategic Environmental Assessment

1.9 Sustainability Appraisal is a statutory requirement of the Planning and Compulsory Purchase Act 2004. It is designed to ensure that the plan preparation process maximises the contribution that a plan makes to sustainable development and minimises any potential adverse impacts. The SA process involves appraising the likely social, environmental and economic effects of the policies and proposals within a plan from the outset of its development.

1.10 Strategic Environmental Assessment (SEA) is also a statutory assessment process, required under the SEA Directive[1], transposed in the UK by the SEA Regulations (Statutory Instrument 2004, No 1633). The SEA Regulations require the formal assessment of plans and programmes which are likely to have significant effects on the environment and which set the framework for future consent of projects requiring Environmental Impact Assessment (EIA)[2]. The purpose of SEA, as defined in Article 1 of the SEA Directive is '*to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans….with a view to promoting sustainable development'*.

1.11 SEA and SA are separate processes but have similar aims and objectives. Simply put, SEA focuses on the likely environmental effects of a plan whilst SA includes a wider range of considerations, extending to social and economic impacts. The requirements to carry out SA and SEA are distinct, although it is possible to satisfy both using a single appraisal process (as advocated in the National Planning Practice Guidance), whereby users can comply with the requirements of the SEA Directive through a single integrated SA process – this is the process that is being undertaken in Herefordshire. From here on, the term 'SA' should therefore be taken to mean 'SA incorporating the requirements of the SEA Directive'.

Habitats Regulations Assessment

1.12 Under Article 6 (3) and (4) of the Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) land-use plans, including Development Plan Documents, are also subject to Habitats Regulations Assessment (HRA). The purpose of HRA is to assess the impacts of a land-use plan against the conservation objectives of a European site and to ascertain whether it would adversely affect the integrity of that site.

1.13 The HRA for the Herefordshire Minerals and Waste Local Plan will be undertaken separately to the SA and will need to consider the potential for adverse effects on the integrity of European sites both alone and in combination with development proposed in neighbouring authorities' plans. The findings will be taken into account in the SA where relevant (for example to inform judgements about the likely effects of potential development locations proposed in the HMWLP on biodiversity).

1.14 The adopted Herefordshire Local Plan Core Strategy was subject to HRA by the Council throughout its preparation, and that HRA work will be drawn on as appropriate throughout the HRA of the Herefordshire Minerals and Waste Local Plan.

Meeting the requirements of the SEA Directive

1.15 **Table 1.1** below signposts how the requirements of the SEA Regulations have been met within this SA Report.

[1] SEA Directive 2001/42/EC

[2] Under EU Directives 85/337/EEC and 97/11/EC concerning EIA.

Table 1.1 Meeting the Requirements of the SEA Directive

SEA Directive Requirements	Covered in this SA Report
Preparation of an environmental report in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated. The information to be given is (Art. 5 and Annex I):	
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes;	Chapters 1 and 3, and Appendix 1.
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Chapter 3.
c) The environmental characteristics of areas likely to be significantly affected;	Chapter 3.
d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.;	Chapter 3.
e) The environmental protection, objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation;	Chapter 3 and Appendix 1.
f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. (Footnote: These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects);	Chapter 4 and Appendix 4.
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	Chapter 4.
h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Chapter 2.
i) a description of measures envisaged concerning monitoring in accordance with Art. 10;	To be prepared at a later stage in the plan process.
j) a non-technical summary of the information provided under the above headings	To be prepared at a later stage in the plan process.
The report shall include the information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process to avoid duplication of the assessment (Art. 5.2)	Addressed throughout the SA report.
Consultation: • authorities with environmental responsibility, when deciding on the scope and level of detail of the information which must be included in the environmental report (Art. 5.4)	Consultation on the SA Scoping Report was undertaken between February and March 2017. Consultation responses received have been addressed in this SA Report (as explained in Appendix 5).
• authorities with environmental responsibility and the public, shall be given an early and effective opportunity within appropriate time frames to express their opinion on the draft plan or programme and the accompanying environmental report before the adoption of the plan or programme (Art. 6.1, 6.2)	Consultation is being undertaken for 8 weeks between August 2017 and October 2017 and will continue to be undertaken for all future iterations of the HMWLP.
• other EU Member States, where the implementation of the plan or programme is likely to have significant effects on the environment of that country (Art. 7).	N/A
Provision of information on the decision: When the plan or programme is adopted, the public and any countries consulted under Art.7 must be informed and the following made	To be addressed after the HMWLP is adopted.

SEA Directive Requirements	Covered in this SA Report
available to those so informed: • the plan or programme as adopted • a statement summarising how environmental considerations have been integrated into the plan or programme and how the environmental report of Article 5, the opinions expressed pursuant to Article 6 and the results of consultations entered into pursuant to Art. 7 have been taken into account in accordance with Art. 8, and the reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and • the measures decided concerning monitoring (Art. 9)	
Monitoring of the significant environmental effects of the plan's or programme's implementation (Art. 10)	To be addressed after the HMWLP is adopted.

Structure of the SA Report

1.16 This chapter has described the background to the production of the Herefordshire Minerals and Waste Local Plan, and the requirement to undertake SA and other assessment processes. The remainder of this report is structured into the following sections:

- **Chapter 2** explains the methodology for the SA.
- **Chapter 3** sets out the sustainability context for minerals and waste development in Herefordshire.
- **Chapter 4** describes the SA findings of the Vision, strategic objectives, and the reasonable alternative options relating to minerals and waste proposed in the Herefordshire Minerals and Waste Local Plan Issues and Options Report.
- **Chapter 5** summarises the key findings from the SA and describes the next steps to be undertaken in the plan making process.

1.17 The appendices to the SA Report are structured as follows:

- **Appendix 1** sets out the review of relevant plans, policies and programmes.
- **Appendix 2** presents maps of the baseline information.
- **Appendix 3** provides a list of options presented in the HMWLP showing which options have been subject to SA and why.
- **Appendix 4** presents the detailed SA matrices of the options proposed in the HMWLP.
- **Appendix 5** presents the consultation comments received in relation to the SA Scoping Report and describes how these comments were addressed in the SA.

2 Methodology

2.1 The methodology set out in this chapter describes the approach that has been taken to the SA of the Herefordshire Minerals and Waste Local Plan to date. In addition to complying with legal requirements, the approach being taken to the SA of the HMWLP is based on current best practice and the guidance on SA/SEA set out in the National Planning Practice Guidance, which involves carrying out SA as an integral part of the plan-making process. **Table 2.1** sets out the main stages of the plan-making process and shows how these correspond to the SA process.

Table 2.1 Corresponding stages in plan making and SA

Step 1: Evidence Gathering and engagement
SA stages and tasks
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope
1: Identifying other relevant policies, plans and programmes, and sustainability objectives
2: Collecting baseline information
3: Identifying sustainability issues and problems
4: Developing the SA framework
5: Consulting on the scope of the SA
Step 2: Production
SA stages and tasks
Stage B: Developing and refining options and assessing effects
1: Testing the Plan objectives against the SA Framework
2: Developing the Plan options
3: Evaluating the effects of the Plan
4: Considering ways of mitigating adverse effects and maximising beneficial effects
5: Proposing measures to monitor the significant effects of implementing the Plan
Stage C: Preparing the Sustainability Appraisal Report
1: Preparing the SA Report
Stage D: Seek representations on the Plan and the Sustainability Appraisal Report
1: Public participation on Plan and the SA Report
2(i): Appraising significant changes
Step 3: Examination
SA stages and tasks
2(ii): Appraising significant changes resulting from representations
Step 4 & 5: Adoption and Monitoring
SA stages and tasks
3: Making decisions and providing information
Stage E: Monitoring the significant effects of implementing the Plan
1: Finalising aims and methods for monitoring
2: Responding to adverse effects

SA Stage A: Scoping

2.2 The SA process began in February 2017 with the production of a Scoping Report for the Herefordshire Minerals and Waste Local Plan.

2.3 The scoping stage of the SA involves understanding the social, economic and environmental baseline for the plan area as well as the sustainability policy context and key sustainability issues. The Scoping Report presented the outputs of the following tasks:

- Policies, plans and programmes of relevance to the HMWLP were identified and the relationships between them were considered, enabling any potential synergies to be exploited and any potential inconsistencies and incompatibilities to be identified and addressed.
- Baseline information was collected on environmental, social and economic issues. This baseline information provides the basis for predicting and monitoring the likely effects of the HMWLP and helps to identify alternative ways of dealing with any adverse effects identified.
- Key sustainability issues for the County were identified.
- A Sustainability Appraisal framework was presented, comprising the SA objectives against which options and, subsequently, sites and policies would be appraised. The SA objectives were primarily based on those already developed for the Herefordshire Local Plan – Core Strategy, however, a number of new objectives specific to minerals and waste were introduced and those objectives which are irrelevant to the HMWLP were removed. The objectives were also reorganised and amalgamated to reduce duplicity (previously 23 objectives for the Herefordshire Local Plan – Core Strategy). As in the Core Strategy, the 16 SA objectives are grouped into six themes to enable related sustainability issues to be considered together during the appraisal (see **Table 2.2**). The six themes are as follows:
    1. Education and employment.
    2. Healthy and prosperous communities.
    3. Transport and access.
    4. Built environment.
    5. Resource consumption and climate change.
    6. Natural environment.

2.4 Public and stakeholder participation is an important element of the SA and wider plan-making processes. It helps to ensure that the SA report is robust and has due regard for all appropriate information that will support the plan in making a contribution to sustainable development. The SA Scoping Report for the HMWLP was published in February 2017 for a five week consultation period with the statutory consultees (Natural England, the Environment Agency and English Heritage [now Historic England]). **Appendix 5** lists the comments that were received during the scoping consultation and describes how these were assessed in the SA report. The wording of some of the objectives has been revised since the Scoping Report to take into account the suggestions of the statutory consultees.

2.5 The SA framework for the Herefordshire Minerals and Waste Local Plan is presented in **Table 2.2** which outlines the 16 main SA objectives along with their associated questions, and demonstrates how all of the SEA topics have been covered by the SA objectives.

Table 2.2 SA Framework for the Herefordshire Minerals and Waste Local Plan

SA Objective	Appraisal Question	SEA Topic covered by objective
Employment		
1. Support, maintain or enhance the provision of employment opportunities in the minerals and waste sectors.	1.1 Support the development and growth of the minerals and waste economy in Herefordshire and generate employment opportunities for local people.	Material assets[3], population
2. Maintain or enhance conditions that enable a sustainable economy and continued investment.	2.1 Encourage long-term investment in Herefordshire's minerals and waste sectors. 2.1 Ensure a steady and adequate supply of minerals to meet the needs of society in accordance with national policy.	Material assets, population
Healthy and Prosperous Communities		
3. Protect and improve the health of the people of Herefordshire, and reduce disparities in health geographically and demographically.	3.1 Avoid or minimise adverse effects on human health and safety to acceptable levels from mineral and waste operations. 3.2 Provide opportunities to improve health and amenity through delivery of green infrastructure, enhanced public rights of way and improved access to recreation as part of the development and restoration of sites. 3.3 Avoid or minimise adverse effects on the quality and extent of existing recreational assets.	Population, human health
4. Reduce poverty and social inclusion by closing the gap between the most deprived areas in the county and the rest of the county.	4.1 Provide opportunities for local people to access employment and skills in the minerals and waste sectors.	Population, human health
Transport and Access		
5. Reduce road traffic, congestion and pollution, and promote sustainable modes of transport and efficient movement patterns in the County.	5.1 Reduce the vehicle kilometres travelled for the transportation of minerals and waste. 5.2 Promote the use of sustainable modes of transport. 5.3 Encourage the use of low emission vehicles for the transportation of waste and minerals.	Material assets
Built Environment		
6. Value, protect and enhance the character and built quality of settlements and neighbourhoods and the county's historic environment and cultural heritage.	6.1 Conserve, protect and enhance designated and undesignated heritage assets in a manner appropriate to their significance, including Conservation Areas, Listed Buildings, archaeological remains, and areas of historical heritage and cultural value e.g. locally listed buildings. 6.2 Prevent development which is inappropriate in scale, form or design to its setting or to its function or local area.	Cultural heritage, including architectural and archaeological heritage
Resource Consumption and Climate Change		
7. Move treatment of waste up the waste hierarchy.	7.1 Minimise disposal of waste to landfill from households, businesses etc. including hazardous waste. 7.2 Promote re-use, recovery and recycling of waste. 7.3 Deal with waste locally and/or through the best Practical Environmental Option.	Material assets

[3] 'Material assets' is listed as one of the topics to be considered in the SEA, but there is no clear definition of what this topic should cover in the SEA Directive or Regulations, and it has been variously defined in different SEA reports as relating to natural resources, e.g. minerals, or built infrastructure, e.g. transport infrastructure. For the purposes of this SEA, the material assets topic is assumed to include resources such as water, minerals and waste, as well as built infrastructure, including transport and waste infrastructure, but also economic and employment infrastructure and interests.

SA Objective	Appraisal Question	SEA Topic covered by objective
	7.4 Promote sustainable waste management principles.	
8. Promote sustainable use of mineral resources.	8.1 Safeguard mineral resources from loss by permanent sterilisation. 8.2 Promote the most efficient use of mineral resources.	Material assets
9. Reduce Herefordshire's vulnerability to the impacts of climate change as well as its contribution to the problem.	9.1 Reduce the county's contribution to climate change by reducing greenhouse gas emissions from waste and mineral transportation and management activities. 9.2 Promote energy efficiency by encouraging the use of energy efficient buildings and plant, and the use of appropriate renewable or lower carbon energy sources on site.	Climatic factors
10. Promote effective restoration and appropriate after use of sites.	10.1 Provide for the restoration of land to an appropriate after-use including the creation of accessible greenspace at former waste and mineral sites.	Water, air, soil
Environmental		
11. Value, maintain, restore and expand county biodiversity and geodiversity.	11.1 Protect and enhance habitats of international, national, regional or local importance. 11.2 Protect international, national, regional or locally important terrestrial or aquatic species. 11.3 Maintain wildlife corridors and minimise fragmentation of ecological areas and green spaces. 11.4 Provide opportunities for enhancing biodiversity and achieve net gains in biodiversity, where possible as part of the development and restoration of a site. 11.5 Maintain and improve geodiversity, avoid irreversible losses, and create, extend or enhance Local Geological Sites.	Biodiversity, fauna, flora
12. Value, protect, enhance and restore the landscape quality of Herefordshire, including its rural areas and open spaces.	12.1 Value, enhance and protect natural environmental assets including AONB's, historic landscapes, open spaces, parks and gardens and their settings. 12.2 Minimise the landscape and visual intrusion of waste and mineral facilities on sensitive and/or distinct landscapes.	Landscape, fauna, flora
13. Value, protect and enhance the quality of watercourses and maximise the efficient use of water.	13.1 Protect and enhance the quality of watercourses. 13.2 Maximise the efficient use of water and protect the quality and quantity of ground and surface water from over abstraction.	Water
14. Reduce the risk of flooding and the resulting detriment to public well-being, the economy and the environment.	14.1 Ensure minerals and waste development are not at risk of flooding both presently and taking into account climate change and do not increase the risk of flooding elsewhere. 14.2 Ensure flood risk reduction / improvements to the flood regime.	Water
15. Minimise noise, light, and air pollution.	15.1 Minimise air, noise and light pollution from activities associated with mineral and waste developments and the potential for such pollution. 15.2 Help achieve the objectives of Air Quality Management Plans.	Air
16. Value, protect and enhance soil quality and resources.	16.1 Provide opportunities to improve soil quality and minimise contamination of soils. 16.2 Avoid the loss of the best and most versatile agricultural land by prioritising the location of waste and mineral developments to previously developed sites in preference to greenfield locations.	Soil

Stage B: Developing and refining options and assessing effects

2.6 Regulation 12 (2) of the SEA Regulations requires that:

"The (environmental or SA) report must identify, describe and evaluate the likely significant effects on the environment of—

(a) implementing the plan or programme; and

(b) reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme"

2.7 It should be noted that any alternatives considered to the plan need to be 'reasonable'. This implies that alternatives that are not reasonable do not need to be subject to appraisal. Examples of unreasonable alternatives could include policy options that do not meet the objectives of the plan or national policy (e.g. the National Planning Policy Framework) or site options that are unavailable or undeliverable.

2.8 It also needs to be recognised that the SEA and SA findings are not the only factors taken into account when determining which options to take forward in a plan. Indeed, there will often be an equal number of positive or negative effects identified for each option, such that it is not possible to 'rank' them based on sustainability performance in order to select an option. Factors such as public opinion, deliverability and conformity with national policy will also be taken into account by plan-makers when selecting options for their plan.

Identification and appraisal of the options for the Herefordshire Minerals and Waste Local Plan

2.9 The following issues within the HMWLP Issues and Options Report present specific options (i.e. alternative ways that the HMWLP could address an issue) that need to be subject to SA to identify any likely environmental, social or economic effects and inform the selection of a preferred approach to the plan:

- Vision – 1 option (Question 10).
- Objectives – 1 option (Question 12).
- Sand and gravel – 4 options (Question 22).
- Crushed rock – 3 options (Question 25).
- Building stone – 3 options (Question 27).
- Hydrocarbons – 2 options (Question 29).
- Future mineral site identification – 4 options (Question 34).
- Mineral site safeguarding – 2 options (Question 36).
- LAWC – 1 option (Question 49).
- C&I waste – 2 options (Question 53).
- CD&E waste – 2 options (Question 57).
- Agricultural waste – 2 options (Questions 60 and 61).
- Hazardous waste – 1 option (Question 64).
- Future waste site identification – 4 options (Question 68).
- Waste site safeguarding – 2 options (Question 70).

2.10 **Appendix 3** provides a full list of all the questions posed in the HMWLP Issues and Options Report and whether or not they have been subject to SA and the reasons why they have or have not been appraised. The descriptions and SA findings of each reasonable alternative option are summarised in **Chapter 4** of this report and the detailed SA matrices can be found in **Appendix 4**.

Stage C: Preparing the Sustainability Appraisal Report

2.11 This SA Report describes the process that has been undertaken to date in carrying out the SA of the Herefordshire Minerals and Waste Local Plan. It sets out the findings of options included in the Issues and Options document, highlighting any likely significant effects (both positive and negative, and taking into account the likely secondary, cumulative, synergistic, short, medium and long-term and permanent and temporary effects), making recommendations for improvements and clarifications that may help to mitigate negative effects and maximise the benefits of the plan as it is drafted in full.

Stage D: Consultation on the Herefordshire Minerals and Waste Local Plan and this SA Report

2.12 Herefordshire Council is inviting comments on the Herefordshire Minerals and Waste Local Plan and this SA Report. This SA Report is being published for an 8 week consultation period from August to October 2017.

Stage E: Monitoring the implementation of the Plan

2.13 Recommendations for monitoring the social, environmental and economic effects of implementing the Herefordshire Minerals and Waste Local Plan will be presented in the next iteration of the SA Report, once a Preferred Approach for the plan has been identified.

Appraisal methodology

2.14 The reasonable alternative options for the Herefordshire Minerals and Waste Local Plan have been appraised against the 16 SA objectives in the SA framework (see **Table 2.2**), with scores being attributed to each option to indicate its likely sustainability effects on each objective.

++	The option or policy is likely to have a **significant positive** effect on the SA objective(s).
++/-	The option or policy is likely to have a mixed effect (**significant positive** and **minor negative**) on the SA objective(s).
+	The option or policy is likely to have a **positive** effect on the SA objective(s).
0	The option or policy is likely to have a **negligible** or no effect on the SA objective(s).
-	The option or policy is likely to have a **minor negative** effect on the SA objective(s).
--/+	The option or policy is likely to have a mixed effect (**significant negative** and **minor positive**) on the SA objective(s).
--	The option or policy is likely to have a **significant negative** effect on the SA objective(s).
?	It is **uncertain** what effect the option or policy will have on the SA objective(s), due to a lack of data.
+/- or ++/--	The option or policy is likely to have a **mixture of positive and negative** effects on the SA objective(s).

Figure 2.1 Key to symbols and colour coding used in the SA of the Herefordshire Minerals and Waste Local Plan

2.15 Where a potential positive or negative effect is uncertain, a question mark has been added to the relevant score (e.g. +? or -?) and the score is colour coded as per the potential positive, negligible or negative effect (e.g. green, yellow, orange, etc.).

2.16 The likely effects of policies and site allocations need to be determined and their significance assessed, which inevitably requires a series of judgments to be made. This appraisal has attempted to differentiate between the most significant effects and other more minor effects through the use of the symbols shown above. The dividing line in making a decision about the significance of an effect is often quite small. Where either (++) or (--) has been used to distinguish significant effects from more minor effects (+ or -) this is because the effect of policy or site allocation on the SA objective in question is considered to be of such magnitude that it will have a noticeable and measurable effect taking into account other factors that may influence the achievement of that objective. However, scores are relative to the scale of proposals under consideration.

2.17 The SA findings for the reasonable alternative options in the HMWLP are summarised in **Chapter 4** and detailed appraisal matrices for the options are presented in **Appendix 4.**

Difficulties encountered and data limitations

2.18 It is a requirement of the SEA Regulations that consideration is given to any data limitations or other difficulties that are encountered during the SA process and these are outlined below.

2.19 The Herefordshire Minerals and Waste Local Plan Issues and Options Report is a high level document and this is reflected in the relatively high level nature of this SA Report. The options focus on the scope of the plan and lack detail on strategic or development management policies. The document also lacks detail about the locations of site allocations which will be addressed at the Preferred Options/Draft Plan stage.

2.20 The Environment Agency Flood Map for Planning (rivers and sea) does not include climate change allowances and primarily shows potential flooding from main rivers (catchments smaller than 3km^2 are not represented) which may result in smaller catchments with an associated flood risk not being identified.

3 Sustainability Context for Minerals and Waste Development in Herefordshire

Review of relevant plans, policies and programmes (PPP)

3.1 The Herefordshire Minerals and Waste Local Plan (HMWLP) is not being prepared in isolation and is greatly influenced by other plans and programmes and by broader sustainability objectives. The Plan needs to be consistent with international and national guidance and strategic planning policies, and should contribute to the goals of a wide range of other programmes and plans. It must also conform to environmental protection legislation and the sustainability objectives established at the international, national and local levels.

3.2 Schedule 2 of the SEA Regulations requires:

(1) "an outline of the…relationship with other relevant plans or programmes"; and

(5) "the environmental protection objectives established at international, Community or Member State level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation"

3.3 It is necessary to review and develop an understanding of the environmental, social and economic objectives contained within international, national and local plans, policies and programmes that are of relevance to the HMWLP so that any potential links can be built upon and any inconsistencies and constraints addressed.

3.4 During the Scoping stage of the SA, a review was undertaken of the plans, policies and programmes that are relevant to the HMWLP. This review has been revised and updated in light of comments received during the Scoping Report consultation. The updated review can be seen in full in **Appendix 1** and the key findings are summarised below.

Key international plans and programmes

3.5 At the international level, Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the 'SEA Directive') and Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the 'Habitats Directive') are particularly significant as they require Strategic Environmental Assessment (SEA) and Habitats Regulations Assessment (HRA) to be undertaken in relation to the emerging Herefordshire Minerals and Waste Local Plan. These processes should be undertaken iteratively and integrated into the production of the plan in order to ensure that any potential negative environmental effects (including on European-level nature conservation designations) are identified and can be mitigated.

3.6 Directive 2008/98/EC (Waste Framework Directive) is also of particular relevance which aims to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use.

3.7 There are a wide range of other EU Directives relating to issues such as water and air quality, most of which have been transposed into UK law through national-level policy; however the international directives have been included in **Appendix 1** for completeness.

3.8 **Table 3.1** lists the international plans and programmes which are of relevance to the Herefordshire Minerals and Waste Local Plan.

Table 3.1 Key international plans and programmes reviewed for the SA of the HMWLP

INTERNATIONAL
IPCC's Fifth Assessment Report on Climate Change (IPCC, 2014)
Johannesburg Declaration on Sustainable Development (2002)
Aarhus Convention (1998)
Bern Convention (1979)
Ramsar Convention – Convention on Wetlands of International Importance (1971)
EU DIRECTIVES
SEA Directive 2001
The Waste Framework Directive 2008
The Landfill Directive 1999
EU Management of Waste from Extractive Industries (2006/21/EC)
The Industrial Emissions Directive 2010
The Packaging and Packaging Waste Directive 1994
The Birds Directive 2009
The Habitats Directive 1992
The Water Framework Directive 2000
The Floods Directive 2007
The Drinking Water Directive 1998
The Bathing Water Quality Directive 2006
The Air Quality Directive 2008
The Noise Directive 2000/14/EC
EUROPEAN
EU Seventh Environmental Action Plan to 2020
EU Biodiversity Strategy to 2020
European Spatial Development Perspective (1999)
European Landscape Convention (Florence, 2002)
European Convention on the Protection of the Archaeological Heritage (Valletta, 1992)

Key national plans and programmes

3.9 The most significant development in terms of the policy context for the Herefordshire Minerals and Waste Local Plan has been the publication of the National Planning Policy Framework (NPPF) which replaced the suite of Planning Policy Statements (PPSs) and Planning Policy Guidance (PPGs). The NPPF does not contain specific waste policies (contained in National Planning Policy for Waste) however it does contain policies on the sustainable use of minerals. The NPPF states that Local Plans should:

- identify and include policies for extraction of mineral resource of local and national importance in their area, but should not identify new sites or extensions to existing sites for peat extraction;
- so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously;
- define Minerals Safeguarding Areas and adopt appropriate policies in order that known locations of specific minerals resources of local and national importance are not needlessly sterilised by non-mineral development, whilst not creating a presumption that resources defined will be worked; and define Minerals Consultation Areas based on these Minerals Safeguarding Areas;

- safeguard:
    - existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials; and
    - existing, planned and potential sites for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material.
- set out policies to encourage the prior extraction of minerals, where practicable and environmentally feasible, if it is necessary for non-mineral development to take place;
- set out environmental criteria, in line with the policies in this Framework, against which planning applications will be assessed so as to ensure that permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health, including from noise, dust, visual intrusion, traffic, tip-and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the site; and take into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality;
- when developing noise limits, recognise that some noisy short-term activities, which may otherwise be regarded as unacceptable, are unavoidable to facilitate minerals extraction; and
- put in place policies to ensure worked land is reclaimed at the earliest opportunity, taking account of aviation safety, and that high quality restoration and aftercare of mineral sites takes place, including for agriculture (safeguarding the long term potential of best and most versatile agricultural land and conserving soil resources), geodiversity, biodiversity, native woodland, the historic environment and recreation.

3.10 The NPPF is supported by Planning Practice Guidance which includes guidance on Minerals (DCLG, 2014) and Waste (DCLG, 2015). The Local Plan must be consistent with the requirements of the NPPF.

3.11 As stated above, the detailed waste planning policies are contained in National Planning Policy for Waste (DCLG, 2014). The policies state that when preparing Local Plans, waste planning authorities should take account of a number of criteria including:

- Driving waste management up the waste hierarchy;
- Identifying the need for waste management facilities;
- Working jointly and collaboratively with other planning authorities to provide a network of facilities to deliver sustainable waste management;
- Identifying suitable sites and areas for waste management facilities in line with the proximity principle, giving priority to the re-use of previously developed land.

3.12 Also of particular relevance to the Herefordshire Minerals and Waste Local Plan is the National Waste Management Plan for England (DEFRA, 2013), prepared to fulfil the requirement of the Waste Framework Directive, which provides analysis of the current waste management situation in England and evaluates how it will support implementation of the objectives and provisions of the Waste Framework Directive.

3.13 **Table 3.2** lists the national plans and programmes which are of relevance to the Herefordshire Minerals and Waste Local Plan.

Table 3.2 Key national plans and programmes reviewed for the SA of the HMWLP

NATIONAL
DCLG (2012) *National Planning Policy Framework*
DCLG (2014) *National Planning Policy for Waste*
DEFRA (2013) *National Waste Management Plan for England*
DCLG (2014) *Planning Practice Guidance on Minerals*

DCLG (2015) *Planning Practice Guidance on Waste*
DEFRA (2012) *National Policy Statement for Waste Water*
DEFRA (2013) *National Policy Statement for Hazardous Waste*
HM Government (2013) *Waste prevention programme for England: Prevention is better than cure – The role of waste prevention in moving to a more resource efficient economy*
Collation of the Results of the 2009 Aggregate Mineral Survey for England and Wales
English Heritage (2008): *Minerals Extraction and the Historic Environment*
English Heritage (2008): *Mineral Extraction and Archaeology: A Practice Guide*
HM Government (2009) *The UK Low Carbon Transition Plan*
HM Government (2011): The *Carbon Plan: Delivering our low carbon future*
DECC (2009) *The UK Renewable Energy Strategy*
DEFRA (2013) *The National Adaptation Programme – Making the Country Resilient to a Changing Climate*
DEFRA (GP3): *Underground, Under threat – Groundwater Protection: Policy and Practice*
DCLG (2014) *Planning Practice Guidance - Flood risk and coastal change*
Environment Agency (2011) *The National Flood and Coastal Erosion Risk Management Strategy for England*
DEFRA (2008) *Future Water: The Government's Water Strategy for England*
Environment Agency (2009) *Water for People and the Environment: Water Resources Strategy for England and Wales*
DEFRA (2009) *Safeguarding our Soils: A Strategy for England*
DEFRA (2007) *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland*
DEFRA (2011) *Biodiversity 2020: A strategy for England's wildlife and ecosystem services*
DEFRA (2011) *Securing the Future: Delivering UK Sustainable Development Strategy*
DECC (2014) *Community Energy Strategy*
WHITE PAPERS
Natural Environment White Paper, 2011 The Natural Choice: securing the value of nature
NATIONAL LEGISLATION
Flood and Water Management Act 2010
Climate Change Act 2008
REGULATIONS
The Conservation of Habitats and Species Regulations (2010) (as amended)

Local plans and programmes

3.14 While not a requirement of the SEA Regulations, at the sub-regional and local levels there are also a wide range of plans and programmes that are specific to Herefordshire which provide further context for the HMWLP. These plans and programmes relate to issues such as the economy, transport, climate change and green infrastructure.

Herefordshire Local Plan - Core Strategy

3.15 The Minerals and Waste Local Plan, the Hereford Area Plan DPD, the Travellers' Sites DPD, the Rural Area Site Allocations DPD, and Neighbourhood Development Plans (NDPs) will sit alongside the adopted Herefordshire Local Plan - Core Strategy (adopted 2015) as part of the statutory Development Plan for Herefordshire. The Core Strategy provides the strategic planning framework for the county's future development needs up to 2031. The Core Strategy requires a minimum of 16,500 homes between 2011 and 2031, with at least 6,500 new homes in Hereford and 5,300 homes in rural areas. NDPs will allocate land for the relevant housing need in their area and those areas without NDPs will have land allocated through the Rural Area Site Allocations DPD. The Core Strategy sets a target of 148ha of new employment land over the plan period.

Waste Management Strategy for Herefordshire and Worcestershire 2004-2034

3.16 The aim of the joint Waste Management Strategy for Herefordshire and Worcestershire 2004-2034 (2011) is to decrease waste production and increase the recovery of value from waste, by treating it as a resource. The strategy relates to local authority collected waste only and is guided by a number of principles, including commitment to the waste hierarchy and waste prevention, minimising the use of landfill and consideration of social, environmental and economic impacts.

Herefordshire Local Transport Plan 4 (LTP4) 2016-2031

3.17 The Herefordshire Local Transport Plan 4 was adopted in May 2016 and covers the period 2016-2031. It sets out the Council's strategy for supporting economic growth, improving health and wellbeing and reducing environmental impacts of transport. Objectives of the plan include ensuring transport infrastructure enables economic growth.

Herefordshire Local Flood Risk Management Strategy (2016) (Draft for consultation)

3.18 The draft Herefordshire Local Flood Risk Management Strategy (2016) sets out the framework for how the Council will work with other local flood risk management authorities and the general public to better understand and manage existing and future flood risks from all potential sources of flooding.

Herefordshire Strategic Flood Risk Assessments

3.19 During the preparation of the Herefordshire Local Plan Core Strategy, a Strategic Flood Risk Assessment (SFRA) was prepared in 2009. An update to the SFRA was prepared in 2015 to specifically assess risks to strategic development sites. The Council are now in the process of producing a more thorough update to the SFRA which will inform the Minerals and Waste Local Plan, the Hereford Area Plan DPD, the Travellers' Sites DPD, and the Rural Area Site Allocations DPD. It is anticipated that the updated SFRA will be published for consultation in 2017.

Invest Herefordshire – Herefordshire's Economic Vision (2017)

3.20 Invest Herefordshire – Herefordshire's Economic Vision identifies a series of private sector investment opportunities that will contribute to the growth of the county. It also sets out what the public sector will provide in terms of creating the conditions to encourage economic growth. The economic vision has four key roles: (1) to support the growth of the Herefordshire economy by identifying priority projects; (2) to attract investment to Herefordshire and guide it within the county; (3) to raise the profile of Herefordshire and the investment opportunities; and (4) to provide Herefordshire with clear priorities for negotiations.

Wye Valley AONB Management Plan 2015-2020

3.21 The Wye Valley AONB Management Plan 2015-2020 (2016) is intended to provide guidance and strategic objectives to support and steer positive landscape change. Aims include conservation and enhancement of landscape, biodiversity and heritage assets as well as guiding sustainable land management and development.

Malvern Hills AONB Management Plan 2014-2019

3.22 The purpose of the Malvern Hills AONB Management Plan 2014-2019 (2014) is to help all those involved in managing the AONB to conserve its special qualities, manage pressures on these qualities and improve the AONB for current and future generations of people who live in and visit the area. Aims include conservation, enhancement and wise use of biodiversity, geodiversity, landscape and resources within the AONB. Aims also include supporting tourism and reducing the impact of car traffic in the AONB.

River Wye SAC Nutrient Management Plan (2014)

3.23 The 2010 HRA for the Herefordshire Local Plan - Core Strategy identified likely significant effects on water quality as a result of the plan at that stage. In light of this result, Herefordshire Council established a Water Steering Group comprising officers from the Council, Natural England, the Environment Agency and Dwr Cymru Welsh Water.

3.24 The key outcome of the Water Steering Group discussions was extensive joint working on the production of a River Wye SAC Nutrient Management Plan (NMP). The NMP sets out measures which could be implemented in order to ensure the favourable conservation status of the SAC in

respect of phosphate levels as soon as possible and at the latest by 2027 taking into account the existing river phosphate levels and existing water discharge permits. The NMP also seeks to identify actions that would enable additional development (beyond existing consents) to proceed during the period 2013 to 2031 of the type and amount, and in the locations specified in or pursuant to the Herefordshire Core Strategy and other relevant development plans.

3.25 The NMP comprises three parts: Evidence Base, Options Appraisal and Action Plan. The Environment Agency commissioned consultants to carry out the first two parts. The Evidence Base was produced using source apportionment modelling software to identify the phosphate contributions from the different sources within the catchment. The evidence base also contains the predicted impact of growth in Powys and Herefordshire on the SAC. The Options Appraisal section explores some of the measures available to reduce the phosphate loads. The Action Plan was published in November 2014 and aims to be a 'living document' in that it will undergo regular review and be adapted through time to take account of new evidence. Actions include reviewing the discharge permitting process and community engagement. The first review of the Action Plan is anticipated to be completed later in 2017. An NMP Board has been established comprising a range of partner organisations with the aim of identifying and delivering the actions that achieve the phosphorous conservation target of the River Wye SAC.

Water for Life: The Severn River Basin District Management Plan (2015)

3.26 The purpose of the Water for Life: The Severn River Basin District Management Plan is to meet the requirements of the Water Framework Directive by:

- Preventing deterioration in the status of aquatic ecosystems, protecting them and improving the ecological condition of waters;
- Aiming to achieve good status for all waterbodies by 2021 or 2027;
- Meeting the requirements of Water Framework Directive protected areas;
- Promoting sustainable use of water as a natural resource;
- Conserving habitats and species that depend directly on water;
- Progressively reducing or phasing out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment;
- Progressively reducing the pollution of groundwater and prevent or limit the entry of pollutants;
- Contributing to mitigating the effects of floods and droughts.

3.27 **Table 3.3** lists the local plans and programmes which are of relevance to the Herefordshire Minerals and Waste Local Plan.

Table 3.3 Key local plans and programmes reviewed for the SA of the HMWLP

LOCAL
Herefordshire Council (2015) *Herefordshire Core Strategy 2011 – 2031*
Herefordshire Council (2011) *Waste Strategy for Herefordshire and Worcestershire 2004-2034*
Herefordshire Council (2016) *Herefordshire Local Transport Plan 4 2016-2031*
Herefordshire Council (2005) *Biodiversity Action Plan*
Herefordshire Council (2011) *Economic Development Strategy for Herefordshire 2011-2016*
Malvern Hills AONB Partnership (2014) *Malvern Hills AONB Management Plan 2014-2019*
Wye Valley AONB Partnership (2015) *Wye Valley AONB Management Plan, 2015-2020*
Environment Agency & Natural England (2014) *River Wye SAC Nutrient Management Plan (NMP)*
Environment Agency (2015) Water for life and livelihoods: *The Severn River Basin District Management Plan*
Herefordshire Council (2016) *Draft Local Flood Risk Management Strategy*
Herefordshire Council (2009) *Strategic Flood Risk Assessment for Herefordshire*
Herefordshire Council (2015) *Strategic Flood Risk Assessment - Update*

Environment Agency Wales (2010) *The Wye and Usk Catchment Flood Management Plan and The Severn Catchment Flood Management Plan*
Environment Agency Wales (2016) River *Wye Abstraction Licencing Strategy*
Worcestershire County Council (2016) *Emerging Minerals Local Plan*
Powys County Council (2011) *Powys Local Development Plan 2011 - 2026*
Shropshire Council (2011) *Local Development Framework 2006-2026 Adopted Core Strategy*
Monmouthshire County Council (2014) *Adopted Local Development Plan 2011 - 2021*
Worcester City Council Malvern Hills District Council and Wychavon District Council (2016) *South Worcestershire Development Plan*
Gloucestershire County Council (2012) *Gloucestershire Waste Core Strategy*

Baseline Information

3.28 Baseline information provides the basis for predicting and monitoring the likely sustainability effects of a plan and helps to identify key sustainability issues and means of dealing with them.

3.29 Annex 1 of the SEA Directive requires information to be provided on:

(a) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan;

(b) the environmental characteristics of areas likely to be significantly affected;

(c) any existing environmental problems which are relevant to the plan including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC [the 'Birds Directive'] *and 92/43/EEC* [the 'Habitats Directive'].

3.30 Baseline information collated for the SA of the adopted Core Strategy and the Scoping Report of the Hereford Area Plan DPD and the Rural Area Site Allocation DPD (2016) has been used as a starting point. However, it has been revised and updated in light of consultation comments received on the Scoping Report and also to make use of the most recent available information sources particularly the evidence base studies prepared to support the Herefordshire Minerals and Waste Local Plan.

3.31 Maps depicting the baseline information described below are presented in **Appendix 2**.

Environmental baseline information

Mineral resources

3.32 The following baseline information in relation to mineral resources in Herefordshire is derived from the Minerals Needs Assessment (Hendeca, 2017) which has been prepared to support the Herefordshire Minerals and Waste Local Plan.

3.33 Mineral resources in Herefordshire are relatively limited in range, primarily consisting of aggregates for use in construction but also a small amount of building stone. The commercially exploitable minerals available for extraction from within Herefordshire include sand, gravel, crushed rock, and sandstone.

- Sand and gravel:
    - river terrace deposits are mainly found in the river valleys of the Wye, Lugg and Arrow; and,
    - glacial deposits are present in the north and west of Herefordshire.
- Crushed rock:
    - silurian limestone is found on the western side of the Malvern Hills and Ledbury, the Woolhope dome and in the north-west of the county in the Presteigne/Aymestrey areas;

- carboniferous limestone is present to the south-west of Ross-on-Wye in the northern flanks of the Forest of Dean; and,
- igneous and metamorphic rock occurs in the Malvern Hills.

- Sandstone:
  - sandstone occurs extensively throughout much of Herefordshire and several operational quarries exist in the north, west and south of the county. The output is of particular importance for heritage restoration and in creating authentic character for new-build properties.

3.34 Coal was formerly worked in two locations:

- the southern tip of the Wyre Forest Coalfield, which extended into the north of the county, near the boundary with Worcestershire and Shropshire; and,
- a small outlier site of the Forest of Dean Coalfield which extends into southern Herefordshire.

3.35 There are currently six, known, active quarries in Herefordshire:

- Wellington Quarry - sand and gravel.
- Leinthall Quarry - crushed rock.
- Llandraw Quarry - building stone.
- Callow Quarry - building stone.
- Tybubach Quarry - building stone.
- Westonhill Wood Quarry - building stone.

3.36 There are a number of quarries that are known to be inactive, closed or mothballed, and some for which the activity status is unknown (see **Table 3.4**).

Table 3.4 Quarries in Herefordshire

Name	Status
Sand and gravel	
Hereford Quarry	Closed
Lugg Bridge Quarry	Closed
Moreton on Lugg Quarry	Uncertain
Shobdon Quarry	Inactive
Wellington Quarry	Active
Limestone	
Leinthall Quarry	Active
Loxter Ashbed Quarry	Restored
Nash Scar Quarry	Mothballed
Perton Quarry	Active
Sandstone	
Brakes Farm Quarry	Restored
Callow Quarry	Active
Black Hill Quarry (formerly Coed Major Quarry)	Uncertain
High House Quarry	Uncertain
Hunters Post Quarry	Uncertain
Llandraw Farm Quarry	Active
Pennsylvani Quarry	Uncertain
Sunnybank Delve	Uncertain

Name	Status
Tybubach Quarry	Active
Westonhill Wood Quarry	Active
Coal	
Howle Hill Quarry	Restored

Sand and gravel

3.37 There is one significant sand and gravel quarry operating in Herefordshire. According to the Herefordshire Annual Minerals Survey, during 2015 there was 2,660,000 tonnes of permitted reserves of sand and gravel in Herefordshire with 102,432 tonnes sold during that year.

3.38 During 2009, 111,000 tonnes of sand and gravel was sourced and consumed in Herefordshire, with 5,000 and 6,000 tonnes of sand and gravel from Herefordshire destined for the West Midlands and elsewhere in the UK, respectively[4]. Within the same year, 67,000 tonnes of sand and gravel was imported, resulting in a total of 178,000 tonnes consumed within Herefordshire.

3.39 The NPPF seeks a minimum landbank of seven years for sand and gravel provision. With permitted reserves in Herefordshire standing at 2,660,000 tonnes in 2015, a ten year average annual sales figures of 123,000 tonnes gives a landbank of 21.6 years for sand and gravel.

3.40 The Minerals Need Assessment forecasted future sand and gravel demand based on GVA growth, population projections, and on the Core Strategy housing trajectory (see **Table 3.5**). As indicated above, there is an appropriate landbank of both sand and gravel within Herefordshire up to 2037 if demand were to stay at current levels. However, if demand for sand and gravel should rise in line with forecasts for GVA to 150,000 tonnes per annum and no additional reserves are permitted, reserves will have fallen to 643,000 tonnes in 2031, with a predicted ten year average annual sale figure of 135,000 tonnes in 2031 resulting in a landbank of 4.8 years for sand and gravel. If demand rose in line with population projections to 105,000 tonnes per annum and no additional reserves are permitted, reserves will have fallen to 1,036,000 tonnes in 2031, with a predicted ten year average annual sales figure of 103,000 tonnes in 2031 resulting in a landbank of 9.9 years for sand and gravel. Finally, if demand rose in line with the Core Strategy housing trajectory projections to 324,000 tonnes per annum and no additional reserves are permitted, reserves will be exhausted in 2024/25.

3.41 As there is only one sand and gravel quarry in Herefordshire with current planning conditions requiring that the winning and working of minerals must cease by 31 December 2026, there will be a need for additional reserves of sand and gravel to be permitted to meet demand from 2027 onwards.

Table 3.5 Forecast for future sand and gravel demand

	Demand in 2031 (tonnes)	Ten-year annual average in 2031 (tonnes)	Permitted reserves in 2031 (tonnes)	Landbank in 2031
GVA growth (highest)	150,000	135,000	643,000	4.8 years
Population growth, demand at 4 tonnes of aggregate per head	105,000	103,000	1,036,000	9.9 years
Core Strategy housing trajectory	324,000	324,000	0	0 years

[4] Department for Communities and Local Government, 2011. *Aggregate minerals survey for England and Wales: 2009 results*. Available at: https://www.gov.uk/government/collections/minerals

Crushed Rock

3.42 During 2009, 421,000 tonnes of crushed rock was imported, a decrease of 1,101,000 tonnes since 2005. There was also a significant drop in the consumption of crushed rock from 2005 (1,691,000 tonnes) to 2009 levels (435,000 tonnes). The drop in the import and consumption of crushed rock during this period can be accounted for by the economic recession.

3.43 The NPPF seeks a minimum landbank of ten years for crushed rock provision. Due to the unavailability of data on current sales and permitted reserves for Herefordshire, it is not possible to calculate the landbank solely within the county. However, the West Midlands AMR 2014 provides a landbank figure for Herefordshire in 2011 of 33.3 years which suggests that the landbank of permitted reserves in Herefordshire is likely to be significantly over the minimum level required by the NPPF.

3.44 Of the two operational quarries for crushed rock in Herefordshire, one is required to cease operations by 2027, and therefore could not, currently, contribute to meeting demand after that date. The other quarry can continue operations until 2042. There may, therefore, be a need for additional reserves of crushed rock to be permitted during the lifetime of the Minerals and Waste Local Plan.

Secondary and recycled aggregates

3.45 Secondary and recycled aggregates have an important role to play in Herefordshire as they can reduce the demand for extraction of primary aggregates such as those described above. Secondary aggregates are minerals that are produced as a by-product of other mining or quarrying activities or as a by-product of an industrial process. Recycled aggregates arise from several sources, notably from the demolition of buildings or from civil engineering works such as asphalt planings from road resurfacing and railway track ballast. The use of recycled and secondary aggregates helps to make use of inert waste from construction and demolition and therefore moves waste management up the waste hierarchy.

3.46 There are currently no industrial processes in Herefordshire which are known to produce secondary aggregates[5].

3.47 As discussed above, Herefordshire is a net importer of aggregates and overwhelmingly so for crushed rock, therefore, recycled aggregates could have an important role to play in reducing the reliance on imports of aggregates. The Minerals Need Assessment forecasted arisings of recycled aggregates in 2015 of between 147,000 and 158,000 tonnes, rising to between 177,000 and 191,000 tonnes by 2031. While this would provide a useful contribution to the supply of aggregates, these figures fall short of the assumed 803,600 tonnes required to meet the estimated demand calculated in the Core Strategy housing trajectory.

Building stone

3.48 There is a small and stable market for the sale of building stone from Herefordshire with several active quarries for building stone within the county. Some of these have planning conditions imposed which require operations to cease within the lifetime of the Minerals and Waste Local Plan. Llandraw Farm Quarry is required to cease working by 2021 and Tybubach Quarry by 2030 at the latest. Westonhill Wood Quarry is required to cease working by 2039. Therefore, with the closure of some quarries before the end of the plan period, there may be a need for policy to facilitate new permissions for the winning and working of building stone to continue to meet demand.

[5] Hendeca, 2017. Herefordshire Minerals and Waste Local Plan: Minerals Needs Assessment.

Hydrocarbons

3.49 There will not be any activities relating to the exploration or extraction of hydrocarbons within Herefordshire in the short term, however, this is uncertain in the medium to long term and will depend on whether a licence is taken up for block S051a (which includes a small part south of Herefordshire around Whitchurch, Welsh Newton, Goodrich, Kerne Bridge, Hope Mansell, and Marstow)[6].

Trend/key sustainability issue:

There will be a need for additional reserves of sand and gravel to be permitted to meet demand from 2027 onwards.

There may be a need for additional reserves of crushed rock and building stone to be permitted during the lifetime of the Minerals and Waste Local Plan to continue to meet demand.

Recycled aggregates could have an increasingly important role to play in reducing reliance on imports of aggregates, particularly sand and gravel.

The exploration of hydrocarbons within the county is uncertain in the medium to long term.

Waste

3.50 There are 35 waste management facilities operating in Herefordshire comprising of three physical treatment facilities, one physical treatment facility (soil production), two non-hazardous waste transfer facilities, one non-hazardous waste transfer and treatment facility, five civic amenity facilities, five car breaker facilities, three metal recycling facilities, four biological treatment facilities, one materials recovery facility, one hazardous waste transfer and treatment facility, one clinical waste transfer facility, and eight anaerobic digestion treatment facilities.

3.51 While there is a range of waste management collection, re-use and recycling capacity permitted in Herefordshire addressing a variety of wastes, there are no residual waste management facilities such as energy from waste plant or landfill sites. This means that there is a reliance on such facilities outside the county, including a significant proportion of strategic capacity that has been jointly procured with Worcestershire County Council to manage 'local authority collected waste' (LACW). In 2015/16, 49,562 tonnes of LACW was sent to landfill (56.3%) and 992 tonnes (1%) was incinerated[7].

3.52 In 2015, there was nearly 407,500 tonnes of waste managed at the permitted facilities in Herefordshire[8]. The single largest tonnage is municipal waste (principally wastes from households) followed by agriculture and processing wastes. Over 75% of waste originates in Herefordshire with the remaining wastes originating from adjacent and nearby authorities (most notably from the West Midlands and Monmouthshire). This suggests that Herefordshire is reasonably self-sufficient in managing wastes produced. Over the last three years there has been a notable increase in the capacity of and waste inputs to permitted facilities. This is predominately driven by an increase in biological treatment and anaerobic digestion facilities with permitted capacity increasing by approximately 350kt and waste inputs by 105kt.

3.53 In 2015/16, Herefordshire Council collected 88,004 tonnes of waste, of which 77,725 tonnes was household waste. Of the total household waste collected 31,129 tonnes was sent for recycling, composting or reuse (40%). Approximately 10,278 tonnes of non-household waste was collected of which 6,321 tonnes was sent for recycling, composting or reuse. Of the total amount of LACW 37,450 tonnes (42%) was sent for recycling, composting or reuse with 50,554 tonnes (57%) not sent for recycling[9].

[6] A licence was offered to South West Energy Limited for block SO51a which was declined by the company in September 2016.

[7] DEFRA (2016) ENV18 – Local authority collected waste from April 2000 to March 2016 (England and regions) and local authority data April 2015 to March 2016 (Excel). Available at: https://www.gov.uk/government/statistical-data-sets/env18-local-authority-collected-waste-annual-results-tables

[8] Hendeca, 2016. Draft Waste Need Assessment: Herefordshire Minerals and Waste Local Plan.

[9] DEFRA (2016) ENV18 – Local authority collected waste: annual results tables

3.54 The trend in the annual LACW arising in Herefordshire is consistent with the trend in LACW arisings at the England level, with the total arisings dropping to a low point in 2013 followed by a gradual increase since then of about 1% per annum. The amount of non-household waste being recycled, reused or composted has increased steadily since 2012. Recycling, reusing or composting of household waste has decreased in 2016 compared to previous years to 31,129 tonnes. The amount of household and non-household waste being sent to landfill has progressively increased since 2013.

Table 3.6 LACW arisings in Herefordshire 2011-2016

		2011	2012	2013	2014	2015	2016
Waste from households	Recycled/ composted/ recovery	32,454	32,054	31,210	32,610	33,717	31,129
	Disposal	44,399	44,335	43,563	43,251	42,039	46,596
	Total waste from households	76,854	76,389	74,773	75,861	75,755	77,725
Waste not from households	Recycled/ composted/ recovery	6,395	5,713	5,732	5,592	6,212	6,321
	Disposal	3,133	3,367	3,452	3,636	3,933	3,957
	Total waste not from households	9,528	9,079	9,184	9,228	10,145	10,278
Total LACW		**87,184**	**86,146**	**84,723**	**85,800**	**86,631**	**88,004**

3.55 The Waste Need Assessment for the Herefordshire Minerals and Waste Local Plan forecasts that 90,300 to 100,300 tonnes of local authority collected waste will be generated by 2020 and by 2025 this will have increased to between 93,500 and 108,300 tonnes. An increase in commercial/industrial waste and construction waste is also forecast for years 2020, 2025, and 2030. The report states that there is sufficient capacity at biological treatment facilities in Herefordshire and the energy from waste facility at Hartlebury to meet the forecasted increase in waste. However, there may be pressure on the current contracted capacity of the materials recovery facility at Norton, depending on the amount of recyclable material sent to the EnviroSort Facility from Worcestershire, particularly towards the end of the Plan period.

3.56 Herefordshire Council operate a kerbside recycling scheme. Households have a black wheeled bin for general rubbish and a green wheeled bin for mixed recycling. Recycling centres can be found at 21 locations in Herefordshire including:

- Hereford.
- Bromyard.
- Kington.
- Ledbury.
- Leominster.
- Ross-on-Wye.

Trend/key sustainability issue:

As there are no residual waste management facilities in Herefordshire, there is a reliance on such facilities outside the county to process the 50,554 tonnes of 'local authority collected waste' that is not recycled, composted or reused.

Waste generation is expected to increase if households (and population) are projected to grow.

The amount of waste (both household and non-household) being sent to landfill is steadily increasing. Recycling, reusing or composting of household waste has decreased since 2015.

Potential pressure on the current contracted capacity of the materials recovery facility at Norton particularly towards the end of the Plan period.

Climate change, energy consumption and energy efficiency

3.57 Climate change has the potential not only to affect the environment but also the social and economic aspects of life in Herefordshire. Although the precise nature of environmental changes is not fully understood, changes to precipitation patterns (and river flow) and flooding have implications for the location, longevity and viability of mineral and waste developments. Conversely, predicted dry, hot summers will cause problems of low flows for some of the rivers in the area which will increase demand for water potentially affecting availability for minerals operations. Extreme weather events may also increase disruption to supply chains, infrastructure and transport of minerals and waste.

3.58 The latest DECC figures[10] are set out in **Table 3.7** and show generally decreasing trends for CO_2 emissions (kilotonnes) in Herefordshire from 2005 to 2014. The decreasing trend in emissions reflects the decrease in overall emissions for the UK during this period driven mainly by reductions in emissions from power stations, industrial combustion and passenger cars. The reduction from power stations is driven by change in the fuel mix used for electricity generation with a reduction in the amount of coal, which is a carbon intensive fuel. Emissions for many Local Authorities are heavily influenced by activities at industrial sites, and changes at a single site can have a big impact on emissions trends[11]. Minerals and waste management developments have the scope to contribute to greenhouse gas emissions and climate change, for example, through the transportation of minerals and waste by road.

3.59 In addition, the latest DECC figures[12] for energy consumption (in thousand tonnes of oil equivalent (ktoe)) per consuming sector and household in Herefordshire are set out in **Table 3.8**. There has been a general decreasing trend in energy consumption as well as CO_2 emissions. This also reflects a steady year on year decrease in total energy consumption in Great Britain with the only anomaly occurring between 2009 and 2010, when there was a small increase due to the particularly cold winter that year, resulting in a higher consumption of fuels used for heating purposes. The decreasing trend has been attributed to the impacts of the recession, as well as energy efficiency improvements and declining use particularly in the industrial and commercial sector of petroleum products and gas[13].

Table 3.7 Source of CO2 Emissions in Herefordshire per Sector (2005-2014)

Year	Industry and Commercial ($kt CO_2$)	Domestic ($kt CO_2$)	Transport ($kt CO_2$)	Total ($kt CO_2$)
2005	683.0	479.1	469.9	1,704.5
2006	685.1	483.9	461.2	1,698.3
2007	668.7	468.0	467.4	1,666.8
2008	656.4	468.7	445.4	1,630.1
2009	606.5	431.7	432.4	1,531.3
2010	652.7	465.8	431.0	1,606.3
2011	603.4	398.3	420.1	1,476.0
2012	608.6	422.6	414.5	1,495.6
2013	616.1	408.6	410.3	1,483.0
2014	589.9	347.8	419.6	1,398.2

[10] DECC (2016) UK local authority and regional carbon dioxide emissions national statistics: 2005-2014

[11] Local Authority carbon dioxide emissions estimates 2013. Statistical Release. DECC, June 2015.

[12] DECC (2016) Total final energy consumption at regional and local authority level

[13] Sub-national total final energy consumption statistics. Regional and local authority level statistics (2012 data), DECC, September 2014.

Table 3.8 Energy Consumption in Herefordshire per Sector (2005-2014)

Year	Industry and Commercial (ktoe)	Domestic (ktoe)	Transport (ktoe)	Total (ktoe)
2005	160.2	139.3	135.8	444.2
2006	152.8	137.9	136.8	436.6
2007	149.9	133.3	139.4	431.8
2008	143.3	131.9	136.9	422.9
2009	138.0	125.8	134.1	409.7
2010	146.0	130.1	132.5	423.6
2011	136.6	117.1	130.0	396.9
2012	132.3	117.1	127.8	395.6
2013	137.9	116.1	127.3	403.6
2014	143.9	112.0	130.2	406.5

Trend/key sustainability issue:

Herefordshire is likely to experience more extreme impacts as a result of climate change – wetter winters with greater incidences of flooding, and warmer, drier summers with greater incidences of low flow rivers (during the summer months).

Biodiversity and geodiversity

3.60 Herefordshire is a largely rural county and as such has a rich biodiversity offering. The countryside consists primarily of arable fields, interspersed with pasture and woodland. There are four sites of international importance for nature conservation within Herefordshire: the River Wye Special Area of Conservation (SAC), which passes through the county from Symonds Yat to Clifford, via Hereford; Wye Valley Woodlands SAC, which sit alongside the River Wye in the southern tip of the county; Downton Gorge SAC and River Clun SAC, which lie in the northern part of the county.

3.61 There are three National Nature Reserves (NNRs) within Herefordshire: Moccas Park, The Flits and Downton Gorge. There are also a number of NNRs bordering, or close to the boundary of Herefordshire, to the south and west. There are seven Local Nature Reserves (LNRs) in Herefordshire. These include Queenswood, which is part of the Queenswood Country Park. Queenswood LNR partially coincides with Dinmore Hill Woods SSSI. There are a total of 77 Sites of Special Scientific Interest (SSSIs) in Herefordshire. Some of these are cross-boundary, including the River Teme SSSI, River Wye SSSI, Malvern Hills SSSI and Upper Wye Gorge SSSI.

3.62 There are 685 Local Wildlife Sites (LWS) in Herefordshire. These are spread across the county but there is generally a higher density of LWS in the west. There are also 122 Local Geological Sites in the county.

3.63 The county includes a range of Biodiversity Action Plan (BAP) Priority Habitats, including lowland deciduous woodland, lowland meadows and pasture and lowland dry acid grassland.

3.64 Herefordshire Council have published an Ecological Network map[14], which identifies the key areas for biodiversity in the county. This shows core areas for biodiversity, buffers around those core areas, biodiversity corridors and stepping stones, and sustainable land use areas (areas with proposals for habitat restoration or creation).

[14] Herefordshire Biological Records Centre (2013) Herefordshire Ecological Network Map

Trend/key sustainability issue:

Herefordshire contains many areas of high ecological value including sites of international and national importance which are under pressure from farming and forestry, and also from development pressure for new housing and employment. In light of these pressures, there is a need for biodiversity net gain where any damages to biodiversity are balanced by at least equivalent gains for biodiversity.

Air quality

3.65 The Environment Act 1995 introduced the National Air Quality Strategy and the requirement for local authorities to determine if statutory air quality objectives (AQOs) are likely to be exceeded. All local authorities now report to DEFRA on an annual basis, and have the obligation to declare Air Quality Management Areas (AQMAs) and develop action plans for improvement of air quality if objectives are likely to be exceeded.

3.66 There are two designated AQMAs in Herefordshire. Bargates Leominster AQMA encompasses the junction between the A44 Bargates and B4361 Dishley Street/Cursneh Road in Leominster. The annual mean objective for nitrogen dioxide is being exceeded at this AQMA[15].

3.67 The annual mean objective for nitrogen dioxide is also being exceeded at Hereford AQMA. This AQMA consists of part of the A49 corridor from Holmer Road in the north, to Belmont Road in the south and extending along New Market/Blueschool Street and along Eign Street[16].

Trend/key sustainability issue:

Poor air quality is experienced in certain parts of Herefordshire due to high concentrations of Nitrogen Oxide, and two AQMAs have been declared in Hereford and Leominster.

Water resources and flooding

3.68 Herefordshire lies largely within the River Wye management catchment. Operational river catchments in the county include the Wye catchment, the Arrow, Lugg and Frome catchment and the Monnow catchment:

- The River Wye flows through Herefordshire and Hereford city. The source of the River Wye lies in the Cambrian Mountains and the river flows from the west to the southeast of the county. After leaving Herefordshire, the river flows south to join the River Severn.
- The River Lugg flows from Pool Hill in Wales, through Leominster to join the River Wye near Hampton Bishop.
- The River Arrow flows from west to east to join the River Lugg just south of Leominster.
- The River Dore flows through Hereford to join the River Monnow, which forms the southern border of the county.
- The River Monnow runs along the county's southern boundary to join the River Wye near Symonds Yat.
- The River Frome flows roughly north to south through Herefordshire, passing through Bromyard then joining the River Lugg east of Hereford.

3.69 A small area of the county, around Ledbury, lies within the Severn Vale management catchment and the Leadon operational catchment. The River Leadon flows north to south through Ledbury, to join the River Severn[17]. In addition, the River Teme which runs from west to east in the north of the county is also within the catchment of the River Severn.

3.70 The Wye catchment contains 22 natural rivers, all of which have achieved 'good' chemical status. Only 5 of these rivers are recorded as being of good ecological status, whilst 11 are of moderate

[15] DEFRA (date not available) AQMAs declared by Herefordshire Council, available at: https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=126, accessed 17/10/16

[16] *Ibid*

[17] Environment Agency (2016) Catchment Data Explorer, available at: http://environment.data.gov.uk/catchment-planning/ManagementCatchment/3077, accessed: 18/10/16

and six of poor status. A total of 21 rivers are expected to achieve good status by 2027. The main reasons for not achieving good status are: sewage discharge, barriers to fish migration, impoundment for water storage, and changes in nutrient and sediment loads from agriculture[18].

3.71 The Arrow, Lugg and Frome catchment contains 35 natural rivers. Whilst all of these have achieved good chemical status, only six have achieved good ecological status. Of the remaining rivers, 18 are of moderate ecological status, eight are of poor and three are of bad status. By 2027, all rivers are expected to achieve good status.

3.72 The Monnow catchment contains ten natural rivers. All of these have achieved good chemical status, but only three have achieved good ecological status. Six rivers are of moderate ecological status and one is of poor status. All ten rivers are expected to achieve good status by 2027.

3.73 The Leadon catchment contains eight natural rivers. Whilst all of these are of good chemical status, none are of good ecological status. Five rivers are of moderate ecological status and three of poor status, but a total of seven rivers are expected to achieve good status by 2027.

3.74 There are a number of groundwater Source Protection Zones within Herefordshire to ensure that rivers and aquifers are protected from pollution and are principally located at the River Lugg and River Wye.

3.75 Fluvial flooding (from rivers) is the largest single source of flooding in Herefordshire, accounting for 25% of flooding. Land drainage accounts for 11% of flooding and the source of flooding is unknown for 43% of reported flooding. It is thought that the unknown sources of flooding are likely to be largely fluvial or land drainage. Herefordshire Council has prepared a Strategic Flood Risk Assessment to assess levels and types of flooding in the county[19] and a new Assessment is currently being prepared to inform the development plan documents currently in production. Areas of high flood risk are primarily within the Lower Wye sub-catchment (including Hereford) extending along the River Wye between Belmont and Monmouth, with a significant amount of properties at risk from flooding events (1,253 properties). The catchment with the greatest proportional flood risk is the Upper Lugg with approximately 17% of properties at risk. Smaller settlements with a significant history of flood disruption include Bosbury, Eardisland, Ewyas Harold, Hampton Bishop, Hereford, Kington, Leintwardine, Leominster and Ross-on-Wye.

3.76 Water supply and wastewater treatment in Herefordshire is managed by Welsh Water (Dŵr Cymru) and Severn Trent Water. There are nine Wastewater Treatment Works in the county. Welsh Water's 2014 Water Resources Management Plan identifies Hereford as being in water surplus (i.e. supply is greater than demand) and identifies a number of measures to increase the efficiency of water provision[20]. The River Wye Abstraction Licensing Strategy[21] demonstrates that there will be water available for licensing in the entirety of the catchment, with the exception of in dry, low rainfall conditions, when abstraction licenses are likely to be restricted. New consumptive licenses in the Wye are likely to be restricted.

Trend/key sustainability issue:

Significant improvements to water quality in the country are required to meet the target of 'Good Ecological Status' in all natural water bodies, or 'Good Ecological Potential' in all heavily modified water bodies, as required by the Water Framework Directive.

Herefordshire is affected to varying degrees by fluvial and surface water flooding which is primarily associated with the River Wye. The effects of climate change may increase the incidence of flooding within the county.

Although there are a number of Source Protection Zones in Herefordshire, groundwater is vulnerable to contamination and pollution from the storage, treatment and processing of waste and mineral exploitation.

[18] *Ibid*
[19] Herefordshire Council (2009) Strategic Flood Risk Assessment
[20] Dŵr Cymru Welsh Water (2014) Water Resources Management Plan
[21] Environment Agency (2016) River Wye Abstraction Licensing Strategy

Soil

3.77 The Agricultural Land Classification (ALC) system[22] provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations to agricultural use. The principal factors influencing agricultural production are soil wetness, drought and erosion. These factors together with interactions between them form the basis for classifying land use into one of five grades, where 1 describes land as excellent (land of high agricultural quality and potential) and 5 describes land as very poor (land of low agricultural quality and potential). Land falling outside these scores is deemed to be 'primarily in non-agricultural use', or 'predominantly in urban use'. Grade 3 can be further separated into grades 3a and 3b, although this requires further local surveys and therefore such data is only available for small areas. Grades 1, 2 and 3a are considered to be best and most versatile agricultural land.

3.78 The majority of Herefordshire consists of grade 2 and grade 3 agricultural land. There are scattered areas of grade 1 land and some areas of lower quality, grades 4 and 5 land, particularly in the west of the county. Larger settlements, such as Hereford, Leominster, Ross-on-Wye, Ledbury and Bromyard do not have associated ALC grades as they are predominantly in urban use.

Trend/key sustainability issue:

The majority of Herefordshire consists of best and most versatile agricultural land, which could be lost to development.

Historic environment

3.79 There are a number of heritage designations in Herefordshire, from individual buildings and structures of interest to the distinctive character of the market towns. There are 5,894 Listed Buildings in Herefordshire, 32 of which are on the Heritage at Risk register. There are 265 Scheduled Monuments, 36 of which are on the Heritage at Risk register and 25 Registered Parks and Gardens, of which only Shobdon is considered to be at risk.

3.80 There are 64 Conservation Areas in Herefordshire, including country house estates, the historic centre of Hereford, market towns and villages. Of these, three are listed on the Heritage at Risk Register: Kington, Ross-on-Wye / Bridstow and Widemarsh Common.

3.81 There are a number of documents in the Herefordshire Core Strategy evidence base that further describe and explore the historic environment of the area. These include 'A Characterisation of the Historic Townscape of Central Hereford'[23] and 'Rapid Townscape Assessments' for Ledbury, Ross-on-Wye and Hereford.

Trend/key sustainability issue:

There are areas of significant historical importance in Herefordshire and aesthetic quality, settings and important views should be preserved and enhanced. These are continuously facing pressures for change.

Landscape

3.82 Herefordshire is characterised by being a largely rural area, consisting mainly of farmland with scattered woodland and settlements. The area has varied topography, with a number of hills and ridges. Herefordshire's varied landscape is reflected by the fact that it lies within five National Character Areas (NCAs):

- 98: Clun and North West Herefordshire Hills.
- 99: Black Mountains and Golden Valley.
- 100: Herefordshire Lowlands.
- 101: Herefordshire Plateau.

[22] Natural England (2013) Agricultural Land Classification (ALC) system
[23] Herefordshire Council and English Heritage (2010) A Characterisation of the Historic Townscape of Central Hereford

- 104: South Herefordshire and Over Severn[24].

3.83 The Herefordshire Landscape Character Assessment Supplementary Planning Document (SPD)[25] identifies a hierarchy of landscape character units below NCA level. There are 12 Sub-Regional Character Areas, the largest and most central of which being Central Herefordshire, which includes the city of Hereford. There are 22 Landscape Types (excluding urban areas) as well as several Landscape Description Units and Land Cover Parcels, which are at a fine-grain scale.

3.84 The Wye Valley Area of Outstanding Natural Beauty (AONB) and the Malvern Hills AONB lie partially within Herefordshire. The Wye Valley AONB broadly follows the River Wye, ending just southeast of Hereford and the Malvern Hills AONB incorporating an area east and northeast of Ledbury. The Shropshire Hills AONB lies almost adjacent to the northwestern part of Herefordshire, near Leintwardine. There are no national parks or Green Belt designations in or adjacent to the county.

3.85 The Urban Fringe Sensitivity Analysis[26] characterises the areas surrounding Hereford and each of the five market towns. It identifies areas of low, medium-low, medium, high-medium and high sensitivity, depending on how vulnerable key landscape characteristics are to change. **Table 3.9** provides details on the landscape sensitivity analysis of Hereford.

Table 3.9 Landscape sensitivity analysis of Hereford

Sensitivity	Area
Land with low sensitivity	None of the land around the periphery of Hereford was assessed as falling into the lowest category of sensitivity.
Land with medium-low sensitivity	Holmer – Shelwick Grafton – Lower Bullingham Stretton Sugwas – Huntington
Land with medium sensitivity	Holmer – Shelwick King's Acre Stretton Sugwas – Huntington Burghill – Pipe & Lyde
Land with high-medium sensitivity	Holmer – Shelwick Aylestone Hill – Hampton Bishop Grafton – Lower Bullingham Breinton King's Acre Burghill – Pipe & Lyde
Land with high sensitivity	Holmer – Shelwick Aylestone Hill – Hampton Bishop River Wye Corridor Dinedor/Grafton – Lower Bullingham Grafton – Lower Bullingham Ruckhall – Merryhill Belmont Breinton Stretton Sugwas – Huntington

[24] Natural England (2013-2014) National Character Area profiles
[25] Herefordshire Council and NHS Herefordshire (2004) Landscape Character Assessment
[26] Herefordshire Council and NHS Herefordshire (2010) Urban Fringe Sensitivity Analysis: Hereford and the Market Towns

Trend/key sustainability issue:

The county has significant areas of landscape importance including the Wye Valley AONB and the Malvern Hills AONB, and areas of high landscape sensitivity around Hereford.

Social baseline information

Population

3.86 In 2015, Herefordshire had a population of 188,100, with an almost even split between females (50.5%) and males (49.5%)[27]. This is expected to grow to approximately 205,632 by 2031[28]. Hereford City, and Holmer and Shelwick parishes are home to almost a third (29%) of the population of Herefordshire[29].

3.87 Some 21.3% of Herefordshire residents are aged 65 years or older, which is a higher proportion than both the West Midlands as a whole (16.9%) and England (16.3%). The mean age of residents in Herefordshire is 43 years old and the median age is 44 years old, both of which are about 4-5 years older than the West Midlands and England averages. This pattern is reflected in Hereford City and Holmer and Shelwick parishes[30].

3.88 93.7% of Herefordshire's population is white English/Welsh/Scottish/Northern Irish/British. This is less diverse than both the West Midlands (79.2%) and England (79.8%).

3.89 Details of population density (number of persons per hectare) are not available at the parish level. The population density of Herefordshire is 0.8 persons per hectare. This is substantially lower than the West Midlands average of 4.3 persons per hectare and the England average of 4.1 persons per hectare[31] which reflects the rural nature of the county.

Trend/key sustainability issue:

The age structure of the population currently shows a higher than average level of retired people. This will have implications for the economy, service provision, accommodation and health.

Large proportion of the population living in rural areas.

Housing

3.90 In 2011, Herefordshire contained 81,528 dwellings, of which 24,236 (29.7%) were located in Hereford City and Holmer and Shelwick parishes. Approximately 67.7% of dwellings in Herefordshire are owner occupied, which is slightly higher than the West Midlands (64.9%) and England (63.3%) averages. Only 0.98% of housing in Herefordshire is in shared ownership. Socially rented accommodation accounts for 13.9% dwellings in Herefordshire, whereas 15.5% of dwellings are privately rented. Herefordshire has less socially rented housing than both the West Midlands (19.0%) and England (17.7%).

3.91 Herefordshire has a much higher proportion of detached households (42.3%) than both the West Midlands (23.8%) and England (22.4%). Some 27.8% households are semi-detached and 17.6% are terraced. Flats, maisonettes or apartments make up 11.4% of households and the remainder of households are mobile or temporary structures, shared dwellings or other private rented accommodation[32]. In 2007-2008, 3.3% of dwellings in Herefordshire were vacant (excluding second homes) and 1.1% dwellings were second homes[33].

3.92 In Q2 2013, the median house price in Herefordshire was £181,500[34]. Housing in Herefordshire is less affordable than the England average, with a median house price to median earnings ratio of

[27] Nomis labour market profile – Herefordshire.
[28] Herefordshire Council (2015) Herefordshire Local Plan Core Strategy 2011-2031
[29] ONS (2011) Neighbourhood Statistics, Key Figures for 2011 Census
[30] *Ibid*
[31] *Ibid*
[32] ONS (2011) Neighbourhood Statistics, Households tables QS402EW
[33] ONS (2009) Neighbourhood Statistics, Vacant Dwellings (2007-2008)
[34] GL Hearn (2014) Local Housing Requirements Study Update, Herefordshire Council

8.91:1, compared to 7.25:1 across England[35]. Herefordshire has the worst housing affordability ratio in the West Midlands[36].

3.93 The Local Housing Requirements Study Update[37] identified an objectively assessed need of an additional 15,400 to 16,200 homes between 2011 and 2031. The Core Strategy (2015) provides for a minimum of 16,500 homes in this period. Of the 16,500 homes required by the Core Strategy, 6,500 of these are allocated to Hereford, 4,700 of them to other urban areas (Bromyard, Kington, Ledbury, Leominster and Ross-on-Wye) and 5,300 of them to rural settlements. Of the total housing need, the Housing Requirement Study Update identified a net need for 3,457 affordable homes between 2012 and 2017.

Trend/key sustainability issue:

There is a need for affordable housing, particularly in Hereford, due to average house prices being higher than the regional and national averages.

Social inclusion and deprivation

3.94 The English Indices of Deprivation 2015[38] is a measure of multiple deprivation in small areas or neighbourhoods, called Lower-layer Super Output Areas (LSOA), in England. Seven domains of deprivation are measured: Income Deprivation; Employment Deprivation; Health Deprivation and Disability; Education, Skills and Training Deprivation; Crime; Barriers to Housing and Services; and Living Environment Deprivation. Each domain contains a number of indicators. The seven domains are combined to give a multiple deprivation score. There are 116 LSOAs in Herefordshire and 32,844 nationally[39].

3.95 Herefordshire contains one LSOA in the 10% most deprived in the country (Herefordshire 017D within the Belmont ward). Eight LSOAs are within the 20% most deprived in the country (one within the Leominster North ward, two within the St Martins and Hinton ward, two within the Belmont ward, two within the Leominster South ward, and two within the Ross-on-Wye West ward) with an additional four LSOAs within the 30% most deprived in the country (one within the Central ward, one within the Three Elms ward, one within the Bromyard ward, and one within the Belmont ward).

3.96 Between 2011 and 2012, the number of households in fuel poverty in Herefordshire increased by nearly 2% to 16.4%[40]. In 2016, the Department for Business, Energy & Industrial Strategy published detailed statistics on the level of fuel poverty in 2014, which shows that the area's fuel poverty fell to 15.1%. This is higher than fuel poverty rates for the West Midlands (12.1%) and England (10.6%)[41]. A household is considered to be fuel poor if they have required fuel costs that are above the national median level and were they to spend that amount, they would be left with a residual income below the poverty line[42].

Trend/key sustainability issue:

While the overall level of deprivation is low in the county, there are pockets of high deprivation in Hereford City and Leominster.

A higher than average number of households are considered to be fuel poor in the county.

[35] DCLG (2016) Tables 576 to 578: ratio of house price to earnings (by lower quartile and median by local authority, from 1997)
[36] Herefordshire Council (2015) Herefordshire Local Plan Core Strategy
[37] GL Hearn (2014) Local Housing Requirements Study Update, Herefordshire Council
[38] The English Indices of Deprivation (2015), DCLG
[39] DCLG (2015) Indices of Deprivation 2015 explorer, available at: http://dclgapps.communities.gov.uk/imd/idmap.html, accessed 14/10/16
[40] Herefordshire Council (2016) Facts and Figures about Herefordshire, available at: https://factsandfigures.herefordshire.gov.uk/about-a-topic/environment-conservation-and-sustainability/fuel-poverty-and-domestic-energy-efficiency.aspx, accessed 17/10/16
[41] Department for Business, Energy & Industrial Strategy (2014) Sub-regional fuel poverty data: low income high costs indicator
[42] Department for Business, Energy & Industrial Strategy (2016) Fuel poverty statistics, available at: https://www.gov.uk/government/collections/fuel-poverty-statistics, accessed 17/10/16

Health

3.97 Residents of Herefordshire experience varied health. About 13.2% of children in the county live in poverty[43]. This is lower than the national average of 28% of children living in poverty[44]. Life expectancies for both men and women are higher than the national average, at 83.6 years for women and 79.4 years for men[45]. Health inequalities exist, as the average life expectancy for men in the least deprived areas is 5.2 years more than those in the most deprived areas. Women in the least deprived areas can expect to live 4.2 years longer than those in the most deprived areas[46].

3.98 Obesity rates in year 6 children are 16.8%, which is less than the England average, and 23.7% of adults are classed as obese. Alcohol-specific hospital stays and levels of smoking for those under 18 are worse than the England average, although these are better than the England average for adults[47]. 61.3% adults in Herefordshire are physically active, which is greater than both the West Midlands (55.5%) and England as a whole (57.0%). Participation in sport at least once a week has generally been increasing year on year since 2011/12[48]. The local priorities for health and wellbeing in Herefordshire include reducing alcohol-related harm, stopping smoking and improving the dental health of children[49].

3.99 There are 30 GP surgeries in Herefordshire, four of which are in Hereford. There are also 30 dental surgeries in the county. There are seven hospitals within Herefordshire. The primary NHS hospital is the County Hospital in Hereford, which has an accident and emergency department. This hospital has been upgraded from 'inadequate' to 'requires improvement' by the Care Quality Commission[50]. There is one private hospital, two specialist mental health hospitals and three community hospitals[51].

Trend/key sustainability issue:

Health inequalities exist in Herefordshire between the least and most deprived areas of the county.

Education, skills and training

3.100 There are over 100 publicly funded primary, secondary and special schools in Herefordshire. Some 59% of pupils achieve 5 or more GCSEs at grades A*-C or equivalent, including English and mathematics. This is better than the West Midlands (55%) and England (56.6%) averages. 33.6% of Herefordshire residents have qualifications equivalent to NVQ level 4 and above. This is higher than the figure for the West Midlands as a whole (31.2%) but lower than the rate for England (37.1%)[52].

3.101 In 2019, it is hoped that a new university will open in Hereford: the New Model in Technology and Engineering. As the name suggests, this university will focus on training in engineering and technology, with a strong practical aspect[53].

Crime

3.102 Herefordshire generally has low levels of crime. In 2013/14, police recorded 45 crimes per 1,000 people, which was lower than the average of 66 crimes per 1,000 people across England and Wales. Over 50% of crimes that were recorded were committed in Hereford. There appears to be

[43] Public Health England (2015) Herefordshire Health Profile 2015

[44] Child Poverty Action Group (2016) Child Poverty facts and figures, available at: http://www.cpag.org.uk/child-poverty-facts-and-figures, accessed 17/10/16

[45] Herefordshire Council (2016) Facts and Figures about Herefordshire, available at: https://factsandfigures.herefordshire.gov.uk/about-a-topic/health-and-well-being/life-expectancy.aspx, accessed 17/10/16

[46] Public Health England (2015) Herefordshire Health Profile 2015

[47] *Ibid*

[48] Sport England (2016) Local Sport Profile for Herefordshire

[49] Public Health England (2015) Herefordshire Health Profile 2015

[50] Updated in November 2016.

[51] NHS Choices website, available at: http://www.nhs.uk/service-search/Hospital/Herefordshire/Results/3/-2.746/52.102/7/10126?distance=25, accessed 17/10/16

[52] ONS (2011) Neighbourhood Statistics, Qualifications Gained

[53] http://nmite.org.uk/about/

a correlation between crime and the most deprived areas of Herefordshire[54]. In 2013/14, about 88% of people thought their local area had been safe over the last three months[55].

3.103 The most common type of crime in Herefordshire in 2013-2014 was criminal damage and arson, followed by violence with injury offences[56].

Culture, leisure and recreation

3.104 Leisure activities contribute to the quality of life of residents, providing amenity and opportunities for enhancing intellectual, spiritual and physical wellbeing. Additionally, they represent a tourism asset and their provision can result in economic benefits to the area.

3.105 Herefordshire has a range of cultural and leisure opportunities, including Eastnor Castle and Hampton Court Castle, a number of houses and gardens to visit, as well as its characteristic market towns. Hereford city is home to the Hereford Museum and Art Gallery and The Old House, a well preserved example of a 17th century timber framed building.

3.106 Many visitors to Herefordshire come for its countryside, including the Wye Valley in the south of the county and the wealth of walking opportunities across the county. There is a network of public rights of way (PROW) across the countryside including promoted routes such as the Wye Valley Walk and the Three Rivers Ride. The Offa's Dyke Path, a National Trail, passes through the county near Kington. National Cycle Network (NCN) routes 44, 46, 426 and 423 are present within the county. The county also contains Queenswood Country Park near Bodenham. This includes an arboretum, semi-natural ancient woodland (a SSSI) and a Local Nature Reserve (LNR).

3.107 Herefordshire has a number of leisure centres managed by Halo, on behalf of Herefordshire Council. There are Halo leisure facilities in Bromyard, Kington, Ledbury, Leominster, Hereford, Ross-on-Wye and Wigmore[57].

3.108 Herefordshire Council has prepared a number of Playing Pitch Assessments, which review provision in various parts of the county. The Herefordshire Play Facilities Study[58] identified 145 sites in the county that have equipped provision for children and young people of which 48% are in the rural parishes and 52% are in urban areas.

Trend/key sustainability issue:

Improve provision of recreational resources (be that to linear routes, open space, or recreational facilities).

Economic baseline information

Economy and employment

3.109 Of those residents of working age (16-64), 81.2% are economically active. This is higher than the proportion for the West Midlands (74.8%) and England as a whole (77.8%). Of those in work, the most common types of employment are skilled trades, professional and associate professional and technical occupations and managers, directors and senior officials. Of those residents of working age in Herefordshire, 1.1% are claiming out of work benefits, which is lower than both the West Midlands (2.3%) and England (1.8%). The average gross weekly pay in Herefordshire is £459, which is lower than both the West Midlands (£492.50) and England (£529.60)[59].

3.110 There are 71,000 employee jobs in Herefordshire, 66.2% of which are full time and 33.8% of which are part time. The industries that employ the most people are wholesale and retail trade: repair of motor vehicles and motorcycles, manufacturing and human health and social work[60].

[54] Herefordshire Council (2016) Facts and Figures about Herefordshire, available at: https://factsandfigures.herefordshire.gov.uk/about-a-topic/community-safety/overall-crime-levels.aspx, accessed 17/10/16
[55] Herefordshire Community Safety Partnership (2014) Herefordshire Community Safety Strategic Plan 2014-2017
[56] ONS (date not available) Neighbourhood Statistics, Key figures for crime and safety
[57] https://www.herefordshire.gov.uk/leisure-and-culture/sports-and-sporting-venues/sports-facilities-information
[58] Ruth Jackson, on behalf of Herefordshire Council (2012) Herefordshire Play Facilities Study
[59] Nomis labour market profile – Herefordshire.
[60] *Ibid*

3.111 There are 9,055 businesses in Herefordshire, across 9,810 local units (sites or workplaces). The majority (89.9%) of businesses are micro, with up to 9 people in the business. Some 8.5% of businesses are small (10-49 people), 1.3% are medium (50-249 people) and 0.2% are large (250 people or more)[61].

Trend/key sustainability issue:

Gross weekly earnings remain lower than the regional and national averages.

Reliance on traditional employment sectors.

Retail and tourism

3.112 Over 4.7 million people visit Herefordshire each year, bringing £411 million to the local economy. This supports about 8,480 jobs in the tourism industry. Tourism is strong in all the market towns, which are characteristic of the region. These provide attractions as well as places to stay, eat and shop[62].

3.113 The main retail and cultural centre of Herefordshire is Hereford city, although market towns also play a key role. Hereford cathedral contains nationally important treasures, such as the Mappa Mundi and the Magna Carta, which draw many visitors each year. Other key attractions include Hereford Racecourse, Hereford Football Club, the New Cattle Market and Belmont Abbey. There are a number of festivals in Hereford throughout the year, which attract both locals and visitors. These include the Borderlines Film Festival and Herefordshire Art Week.

3.114 There are only around 25 hotels in Herefordshire, offering approximately 820 bedrooms (excluding guest houses / bed and breakfasts, etc.). The majority of these hotels are located around Hereford and Ross-on-Wye[63].

Transport and accessibility

3.115 The primary road network in Herefordshire generally radiates out from Hereford and Leominster. The A49 and A438 provide north-south and east-west links across the county respectively, via Hereford. The A44 provides an east-west link via Leominster. The A465 connects Hereford with Abergavenny and the A438 links Hereford with parts of Eastern Wales. The A40 changes into the M50 at Ross-on-Wye, offering residents access to the motorway network. Hereford is a hotspot for congestion in the county, particularly around the main river crossing of the A49 and the bridge at St Martin's Street, which is controlled by traffic lights[64].

3.116 There are no commercial airports within Herefordshire, with the nearest airports being at Birmingham and Cardiff. There are four train stations within Herefordshire at Hereford, Leominster, Colwall and Ledbury. These are served by the following services:

- Arriva Trains Wales services from Milford Haven to Manchester Piccadilly.
- Arriva Trains Wales service from Cardiff to Holyhead.
- Great Western Railway service from Hereford to London Paddington.
- London Midland service from Hereford to Birmingham.

3.117 Two further stations lie just outside the county boundaries, near Leintwardine - Hopton Heath train station and Bucknell train station.

3.118 Bus operators for the main services in Herefordshire are given in

[61] *Ibid*
[62] Herefordshire Council and Invest Herefordshire (2011) Economic Development Strategy for Herefordshire 2011-2016
[63] Bridget Baker Consulting Ltd (2012) Marches LEP Board Research into Hotel demand across the MArches
[64] Herefordshire Council (2016) Herefordshire Council Transport Plan 2016 - 2031

3.119 **Table 3.10**. Generally, urban areas (Hereford and the market towns) have a more extensive range of bus services and these are more frequent than rural areas.

Table 3.10 Bus operators and main services in Herefordshire

Bus operators	Bus services
Arriva Midlands North	738/740
Aston Coaches	417, 675
Belfitt Mini Coach Hire	24B
D R M (Bromyard)	420, 469, 476, 672, 674
First (in Herefordshire)	71/71A/71B, 420, 426, 437, 446, 453, 454, 477, 492
H & H Coaches / James Bevan	35
Lugg Valley Primrose Travel/Lugg Valley Travel	490, 492, 494, 495/496, 501, 502, 802
Sargeants Bros. Coaches	41, 461/462
Stagecoach in South Wales	X4, 39/39A, 39B,
Stagecoach in Wye and Dean	32, 33, 34, 36, 44, 132
Yeomans Canyon Travel	39/39A, 412, 440, 447, 449

3.120 The majority of households in Herefordshire own either one (41.6%) or two (30.4%) cars or vans. Car ownership is generally higher in Herefordshire than in the West Midlands and England, as 11.7% households own three or more compared to 8.0% in the West Midlands and 7.4% in England.

3.121 The most common method of travel to work is driving a car or van, which is a trend seen across the country. Some 6.3% of people in Herefordshire work from home, which is greater than in the West Midlands (3.0%) and England (3.5%). Nearly 10% of people in Herefordshire walk to work, which is similar to England as a whole, although higher than for the West Midlands.

3.122 In 2014 there were 83 road casualties in Herefordshire, an increase of 36% since 2013. This may have been linked to an increased traffic flow of 2.4% across the country, compared to 2013. In 2014, 11 collisions lead to 13 fatal casualties[65] in Herefordshire.

Trend/key sustainability issue:

High reliance on private cars.

Traffic congestion in Hereford and strain on existing infrastructure.

Key sustainability issues and likely evolution without the plan

3.123 A set of key sustainability issues for Herefordshire were identified during the scoping stage of the SA and were presented in the Scoping Report. It is also a requirement of the SEA Directive that consideration is given to the likely evolution of the environment if the Minerals and Waste Local Plan is not implemented. This analysis is presented in **Table 3.11** in relation to each of the key sustainability issues.

Table 3.11 Key sustainability issues and likely evolution without the Herefordshire Minerals and Waste Local Plan

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
Mineral Resources	
There will be a need for additional reserves of sand and gravel to be permitted to meet demand from 2027 onwards.	In the absence of the HMWLP, which will allocate appropriate sites for mineral extraction, it is likely that there will be an insufficient supply of minerals in Herefordshire to meet demand, thereby increasing reliance on imports of aggregates. Furthermore,

[65] Herefordshire Council (2014) Herefordshire 2014 Road Casualties Summary Report

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
There may be a need for additional reserves of crushed rock and building stone to be permitted during the lifetime of the Minerals and Waste Local Plan to continue to meet demand. Recycled aggregates could have an increasingly important role to play in reducing reliance on imports of aggregates, particularly sand and gravel. The exploration of hydrocarbons within the county is uncertain in the medium to long term.	without the Plan, it is also likely that mineral developments will be sited in inappropriate locations resulting in negative social, economic and environmental effects.
Waste	
As there are no residual waste management facilities in Herefordshire, there is a reliance on such facilities outside the county to process the 50,554 tonnes of 'local authority collected waste' that is not recycled, composted or reused. Waste generation is expected to increase if households (and population) are projected to grow. The amount of waste (both household and non-household) being sent to landfill is steadily increasing. Recycling, reusing or composting of household waste has decreased since 2015. Potential pressure on the current contracted capacity of the materials recovery facility at Norton particularly towards the end of the Plan period.	In the absence of the HMWLP, which will allocate appropriate sites for sustainable waste management, it is likely that the current waste management facilities will reach full capacity. Furthermore, without the Plan, it is also likely that waste and mineral developments will be sited in inappropriate locations resulting in negative social, economic and environmental effects.
Climate change	
Herefordshire is likely to experience more extreme impacts as a result of climate change – wetter winters with greater incidences of flooding, and warmer, drier summers with greater incidences of low flow rivers (during the summer months).	Despite policies in the National Planning Policy Framework (NPPF), the National Planning Policy for Waste (NPPW) and the adopted Herefordshire Core Strategy, in the absence of the HMWLP it is likely that contributions to climate change from minerals and waste developments in Herefordshire will not be appropriately controlled and mitigated.
Biodiversity and geodiversity	
Herefordshire contains many areas of high ecological value including sites of international and national importance which are under pressure from farming and forestry, and also from development pressure for new housing and employment. In light of these pressures, there is a need for biodiversity net gain where any damages to biodiversity are balanced by at least equivalent gains for biodiversity.	Although there is a high level of protection afforded to internationally and nationally designated nature conservation sites within the NPPF, the NPPW and the adopted Core Strategy (Policy LD2), the implementation of the HMWLP can help to conserve biodiversity by directing mineral and waste developments away from sensitive locations. Furthermore, the HMWLP can also help to enhance biodiversity through the restoration of land at former waste and mineral sites to an after-use including accessible greenspace. Without the HMWLP it is more likely that environmental designations in the County could be adversely affected by poorly planned minerals and waste developments or with less stringent mitigation measures applied.
Air quality	
Poor air quality is experienced in certain parts of Herefordshire due to high concentrations of Nitrogen Oxide, and two AQMAs have been declared in Hereford and Leominster.	In the absence of the HMWLP which will support sustainable transport measures and aim to reduce emissions from transport of waste and minerals, air quality in Herefordshire is more likely to be adversely affected as a result of less stringent mitigation or poorly planned minerals and waste developments.

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
Water resources and flooding	
Significant improvements to water quality in the country are required to meet the target of 'Good Ecological Status' in all natural water bodies, or 'Good Ecological Potential' in all heavily modified water bodies, as required by the Water Framework Directive. Herefordshire is affected to varying degrees by fluvial and surface water flooding which is primarily associated with the River Wye. The effects of climate change may increase the incidence of flooding within the county. Although there are a number of Source Protection Zones in Herefordshire, groundwater is vulnerable to contamination and pollution from the storage, treatment and processing of waste and mineral exploitation.	Policy SD3 of the adopted Core Strategy states that development proposals should not lead to the deterioration of EU Water Framework Directive water body status. Policy SS7 seeks to minimise the risk of flooding and to make use of sustainable drainage systems. The HMWLP is expected to take water quality and flooding into account in the allocation of sites for mineral and waste developments and so this issue will be less well addressed without the implementation of this document. Furthermore, in the absence of the HMWLP, there is unlikely to be the opportunity to increase flood storage capacity through the restoration of mineral sites to artificial lakes.
Soil	
The majority of Herefordshire consists of best and most versatile agricultural land, which could be lost to development.	Policy SS7 of the adopted Core Strategy seeks to protect the best agricultural land where possible. The HWMLP will prioritise the co-location of similar or related facilities on existing waste and mineral sites or previously developed sites in preference to greenfield locations. Without the implementation of the HWMLP this issue would be less well addressed.
Historic environment	
There are areas of significant historical importance in Herefordshire and aesthetic quality, settings and important views should be preserved and enhanced. These are continuously facing pressures for change.	Policy LD4 of the adopted Core Strategy seeks to protect, conserve and enhance heritage assets and their settings. The HMWLP offers the opportunity to allocate mineral and waste sites following consideration of their impacts on the historic environment through the SA. Without the implementation of the HMWLP this issue may be less well addressed.
Landscape	
The county has significant areas of landscape importance including the Wye Valley AONB and the Malvern Hills AONB, and areas of high landscape sensitivity around Hereford.	There is a high level of protection afforded to nationally designated landscapes within the NPPF. Policy LD1 of the adopted Core Strategy seeks to conserve and enhance the natural, historic and scenic beauty of important landscapes and features. In the absence of the HMWLP there is potential for new mineral and waste developments to be located in sensitive areas leading to negative impacts on valued landscapes.
Population	
The age structure of the population currently shows a higher than average level of retired people. This will have implications for the economy, service provision, accommodation and health. Large proportion of the population living in rural areas.	It is likely that the age structure and proportion of people living in rural areas will continue with or without the implementation of the HMWLP as these issues are more likely to be addressed through policies in the adopted Core Strategy and other Local Plan documents.
Housing	
There need for affordable housing, particularly in Hereford, due to average house prices being higher than the regional and national averages.	The HMWLP can ensure sufficient resources are available to meet housing requirements through extraction from existing and new minerals sites. Without the implementation of the HMWLP this issue may be less well addressed.
Social inclusion and deprivation	
While the overall level of deprivation is low in the county, there are pockets of high deprivation in Hereford City.	The adopted Core Strategy contains policies for employment development which will help to address deprivation. The HMWLP will allocate waste and mineral development sites which will provide opportunities for employment. Without the

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
A higher than average number of households are considered to be fuel poor in the county.	implementation of the HMWLP this issue may be less well addressed.
Health	
Health inequalities exist in Herefordshire between the least and most deprived areas of the county.	The adopted Core Strategy contains policies relating to the health of the residents of Herefordshire. The HMWLP aims to ensure that mineral and waste developments protect the health, wellbeing, safety and amenity of people and communities in and around Herefordshire. Without the implementation of the HMWLP this issue may be less well addressed.
Culture, leisure and recreation	
Improve provision and access to recreational resources (be that to linear routes, open space, or recreational facilities).	Policy OS1 of the adopted Core Strategy seeks to ensure there is a network of accessible, high quality open spaces and recreation facilities in Herefordshire. The HMWLP aims to ensure that mineral and waste developments provide opportunities to improve health and amenity through delivery of green infrastructure, enhanced public rights of way and improved access to recreation as part of the development and restoration of sites. Without the implementation of the HMWLP this issue may be less well addressed.
Economy and employment	
Gross weekly earnings remain lower than the regional and national averages. Reliance on traditional employment sectors.	Policy E1 in the adopted Core Strategy supports proposals which enhance employment provision and help diversify the economy of Herefordshire. In the absence of the HMWLP, employment in the minerals and waste sectors within Herefordshire may further decrease.
Transport and accessibility	
High reliance on private cars. Traffic congestion in Hereford and strain on existing infrastructure.	In the absence of the HMWLP which will aim to reduce emissions from transport of waste and minerals, traffic growth and congestion in Herefordshire may continue in certain areas and along particular routes. However, other non-minerals and waste related road traffic is likely to contribute more to overall traffic growth and congestion in the County.

4 Sustainability Appraisal Findings

4.1 This chapter describes the SA findings of the Vision, strategic objectives, and reasonable alternative options proposed in the Herefordshire Minerals and Waste Local Plan Issues and Options Report. The components of the plan are divided into the following headings within this chapter:

- Vision and strategic objectives.
- Reasonable alternative options relating to minerals.
- Reasonable alternative options relating to waste.

4.2 The SA matrices prepared for the options are presented in **Appendix 4** and a summary of findings is presented in the subsequent paragraphs under the three headings listed above. **Appendix 3** outlines the options proposed in the Herefordshire Minerals and Waste Local Plan which have been subject to appraisal.

Vision and strategic objectives

Vision

4.3 The Vision for the Herefordshire Minerals and Waste Local Plan is as follows:

"Over the period to 2031, Herefordshire will move towards a sustainable provision of minerals and waste management, balancing development needs whilst seeking to support the county's communities, protect and enhance environmental, historic and cultural assets and strengthen the local economy. Sustainable provision within Herefordshire will be achieved through: efficient use of mineral resources; support for the circular economy; and optimising self-sufficiency and resilience".

Table 4.1 Summary of SA scores for the Vision

SA Objective	Vision
1. Employment	+
2. Sustainable Economy	+
3. Health	+
4. Poverty and Equality	+
5. Sustainable Transport	-
6. Built & Historic Environment	+
7. Waste Hierarchy	++
8. Mineral Resources	++
9. Climate Change	+
10. Restoration	-
11. Biodiversity	+
12: Landscape	+
13: Water	+
14: Flooding	+
15. Pollution	+
16: Soil	+

4.4 Significant positive effects have been identified for SA objectives **7: Waste Hierarchy** and **8: Mineral Resources** as the Vision promotes the sustainable provision of minerals and waste management through the efficient use of mineral resources and by supporting the circular economy.

4.5 Minor positive effects are expected for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as the Vision seeks to strengthen the local economy which will generate employment opportunities in the minerals and waste industries in Herefordshire. Positive effects are identified for SA objectives **11: Biodiversity**, **12: Landscape**, **13: Water**, **14: Flooding**, and **16: Soil** as the Vision supports the sustainable provision of minerals and waste management that protect and enhance environmental assets which is assumed to include biodiversity, geodiversity, landscapes and habitats, ground and surface waters, and best and most versatile agricultural land. Minor positive effects are expected for SA objective **3: Health** and **6: Built & Historic Environment** as the Vision seeks to support the county's communities, and protect and enhance historic and cultural assets whilst achieving sustainable provision of minerals and waste management.

4.6 Minor positive effects are identified for SA objectives **9: Climate Change** and **15: Pollution** as the Vision supports the circular economy which will reduce energy use and greenhouse gas emissions by diverting waste from landfills, support the use of materials and products more efficiently, reduce the consumption of primary resources, and promote low-impact design, materials and operation of assets and buildings.

4.7 Minor negative effects are identified for SA objectives **5: Sustainable Transport** and **10: Restoration** as the Vision does not promote the sustainable transportation of minerals and waste or the restoration of sites to an appropriate after-use. **The Vision could be updated to refer to the use of sustainable transport modes for minerals and waste which would reduce road traffic, congestion and pollution. It could also include reference to the restoration of sites to a high standard which could provide areas of habitat for species, as well as increased opportunities for recreation and tourism.**

Strategic objectives

4.8 **Table 4.2** provides a summary of the SA scores for the strategic objectives of the Herefordshire Minerals and Waste Local Plan. Strategic objectives 1-4 relate to social progress, objectives 5-8 to economic prosperity, and objectives 9-11 to environmental quality.

Table 4.2 Summary of SA scores for the strategic objectives

SA Objective	1: Safeguarding	2: Efficent Use of Minerals	3: Waste Hierarchy	4: Health	5: Supply of Minerals	6: Waste Management	7: Suitable Locations	8: Sustainable Transport	9: Design	10: Climate Change	11:Environment
1. Employment	+	+	+	0	+	+	+	0	0	0	0
2. Sustainable Economy	+	+	+	0	++	++	+	+	0	0	0
3. Health	+?/-	+	+	++	+?/-?	+?/-?	+?/-?	+?	+	+	+
4. Poverty and Equality	+	+	+	0	+	+	+	0	0	0	0
5. Sustainable Transport	+/-	+	+	+?	+?/-?	+?/-?	+?/-?	++	0	+	0
6. Built & Historic Environment	+/-?	+	+	+	+?/-?	+?/-?	+?/-?	+?	+	+	++
7. Waste Hierarchy	0	0	++	0	0	++	+	0	0	+	0
8. Mineral Resources	++	++	++	0	-	0	-	0	0	+	0
9. Climate Change	+/-	+	++	+?	+?/-?	+?/-?	+?/-?	+	0	++	0
10. Restoration	+?	+?	+	+?	+?	+?	0	0	+?	+	+?
11. Biodiversity	++/-?	+	+	+	+?/-?	+?/-?	+?/-?	+?	+	+	++
12: Landscape	+/-?	+	+	+	+?/-?	+?/-?	+?/-?	+?	+	+	++
13: Water	-?	+	+	+?	-?	-?	+?/-?	0	0	+	++
14: Flooding	+/-?	+	0	+?	+?/-?	+?/-?	+?/-?	0	+	+	++
15. Pollution	-?	+	++	+?	+?/-?	+?/-?	+?/-?	+	0	++	0
16: Soil	+/-?	+	+	+	+?/-?	+?/-?	+?	0	+	+	++

4.9 Positive effects are identified for the majority of strategic objectives in relation to SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as they support the development and growth of the minerals and waste economy, and the generation of employment opportunities in Herefordshire. Significant positive effects are identified for SA objective 2:

Sustainable Economy as strategic objectives 5 (Supply of minerals) and 6 (Waste management) seek to ensure there is a steady supply of minerals and the adequate provision of waste management infrastructure which will encourage investment in the minerals and waste industry.

4.10 Six of the 11 strategic objectives will have a minor positive effect on SA objective **3: Health** as these objectives support: the long-term conservation and efficient use of minerals which may reduce adverse impacts on health and amenity incurred from the development of new mineral sites; the circular economy and the use of alternatives to road transport which will reduce negative effects such as air and noise pollution; the delivery of green infrastructure as part of developments and the protection, conservation and enhancement of the county's natural and cultural assets which may improve health, wellbeing and quality of life. Strategic objective 4 (Health) will have a significant positive effect as it directly supports minerals and waste development that make an appropriate contribution to improving health, well-being and quality of life of residents. Mixed effects (uncertain minor positive/uncertain minor negative) are expected for strategic objectives 1 (Safeguarding), 5 (Supply of minerals), 6 (Waste management) and 7 (Suitable locations) as it is possible that by identifying and safeguarding mineral and waste sites and their infrastructure, the effects associated with the operation of these developments (e.g. dust, noise, odour, vibration and traffic levels) may have a negative impact on health and amenity, however, it is also possible that such developments may improve health and amenity through the delivery of green infrastructure, enhanced public rights of way, or improved access to recreation as part of the development and restoration of sites.

4.11 A significant positive effect is identified for strategic objective 8 (Sustainable transport) for SA objective **5: Sustainable Transport** as it seeks to reduce the need to travel and lessen the harmful impacts from traffic growth, promote the use of alternatives to road transport and ensure that new development is served by sustainable transport networks. Minor positive effects are identified for four strategic objectives as they support practices that reduce the transportation of waste and minerals and the use of alternatives to road transport. Mixed effects (uncertain minor positive/uncertain minor negative) are identified for strategic objectives 1 (Safeguarding), 5 (Supply of minerals), 6 (Waste management) and 7 (Suitable locations) as identifying and safeguarding mineral and waste sites may reduce the need for importing minerals and transporting waste further afield for processing, however, there may also be increased traffic levels from the operation of these developments.

4.12 A significant positive effect is expected for strategic objective 11 (Environment) for SA objective **6 Built and Historic Environment** as it supports the protection, conservation and enhancement of historic assets, and the use of local building stone to help maintain and improve the quality of the built environment and local distinctiveness. Minor positive effects are identified for six strategic objectives as they support the delivery of green infrastructure as part of developments which can contribute to the setting of heritage assets; the restoration of land which can enhance historic settings; and the use of sustainable transport modes which can reduce adverse effects on the setting, fabric and structure of the built environment/heritage assets from emissions and vibration. Mixed effects (uncertain minor positive/uncertain minor negative) are identified for strategic objectives 1 (Safeguarding), 5 (Supply of minerals), 6 (Waste management), 7 (Suitable locations) as safeguarding and identifying sites for mineral and waste developments may lead to more mineral extraction activities that could have an adverse impact on the historic environment if the resource lies in close proximity to any heritage assets. However, positive effects may be experienced as it is possible to locate waste developments away from heritage assets and through the restoration of sites.

4.13 Strategic objectives 3 (Waste hierarchy) and 6 (Waste management) will have significant positive effects on SA objective **7: Waste Hierarchy** as they promote a circular economy and the adequate provision of waste management infrastructure in Herefordshire.

4.14 Significant positive effects are identified for strategic objectives 1 (Safeguarding), 2 (Efficient use of minerals) and 3 (Waste hierarchy) for SA objective **8: Mineral Resources** as seek to safeguard mineral resources and promote resource efficiency which directly support the SA objective. A minor positive effect is expected for strategic objective 10 (Climate change) as it supports mineral and waste developments that help adapt to and mitigate the impacts of climate change including the more sustainable use of resources such as recycled and secondary aggregates, and the generation of renewable energy through energy from waste facilities which would reduce extraction of non-renewable resources. Strategic objectives 5 (Supply of minerals)

and 7 (Suitable locations) seek to identify suitable locations for mineral developments to ensure a steady and adequate supply of minerals which will encourage extraction of raw primary resources.

4.15 Strategic objectives 3 (Waste hierarchy) and 10 (Climate change) will have significant positive effects on SA objectives **9: Climate Change** and **15: Pollution** as they promote a circular economy and seek to address the causes and impacts of climate change relating to minerals and waste development activity thereby reducing air pollution from greenhouse gas emissions. Mixed effects (uncertain minor positive/uncertain minor negative) are expected for these SA objectives for strategic objectives 1 (Safeguarding) (for SA objective 9: Climate Change only), 5 (Supply of minerals), 6 (Waste management) and 7 (Suitable locations) as identifying and safeguarding mineral and waste sites and their infrastructure may reduce the need to import minerals and reduce the transport distances of waste, thereby limiting greenhouse gas emissions. However, it is also possible that the operation of these developments may increase the proportion of waste and minerals transported by road resulting in increased emissions from lorries particularly HGVs. An uncertain minor negative effect is expected for strategic objective 1 (Safeguarding) for SA objective 15: Pollution as there may be negative effects associated with the operation of mineral and waste developments such as noise, light, odour and air pollution. Minor positive effects are identified for both SA objectives for strategic objectives 2 (Efficient use of resources), 4 (Health) and 8 (Sustainable transport) as the sustainable transport of minerals and waste will reduce greenhouse gas emissions, and the efficient use of use of minerals including using recycled and secondary aggregates will reduce road haulage activities if the recovered materials are sourced locally thereby reducing transport emissions.

4.16 Minor positive effects are identified for SA objective **10: Restoration** for all strategic objectives (with the exception of objectives 7 [Suitable locations] and 8 [Sustainable transport]) as they promote the safeguarding and delivery of mineral and waste developments that are supported by open space and green infrastructure which may be delivered as part of the restoration of sites.

4.17 Significant positive effects are expected for the environmental SA objectives **11: Biodiversity**, **12: Landscape**, **13: Water**, **14: Flooding** and **16: Soil** for strategic objective 11 (Environment) as it seeks to conserve and promote the natural environment by safeguarding the county's current stock of significant environmental assets from loss and damage whilst also reversing negative trends and encouraging expansion where possible. Mixed effects (uncertain minor positive/uncertain minor negative) are expected for these SA objectives for strategic objectives 1 (Safeguarding), 5 (Supply of minerals), 6 (Waste management) and 7 (Suitable locations) with the exception of SA objective **13: Water** which will have a mixed effect for strategic objective 7 (Suitable locations) only and for SA objective **18: Soil** which will have a mixed effect for strategic objectives 5 (Supply of minerals) and 6 (Waste management) only. Safeguarding and identifying suitable locations for waste/mineral developments and ensuring an adequate supply of minerals and waste management infrastructure may have negative effects on the environment from the operation, scale, design and location of the developments. However, it is also possible that the design of the developments or the restoration of sites may enhance the environment, for example, through the provision of green infrastructure which would benefit biodiversity, the landscape, and the water and soil environments.

4.18 For strategic objective 1 (Safeguarding), a mixed effect (significant positive/uncertain negative) is identified for **11: Biodiversity** as geological formations may be preserved and in some instances created which should contribute to maintaining and enhancing geodiversity. Furthermore, through the sympathetic restoration of sites, there are opportunities to enhance habitats for wildlife, improve biodiversity and deliver biodiversity gains to degraded habitats. The uncertain minor negative effect is identified as there may be adverse effects on biodiversity depending on the location, scale and design of the development.

4.19 Uncertain minor negative effects are identified for SA objective **13: Water** for strategic objectives 1 (Safeguarding), 5 (Supply of minerals) and 6 (Waste management) as depending on the location, scale and design of the developments, there may be negative effects on the quality and quantity of water resources including groundwater aquifers from contamination, release of sediment, diversion of watercourses, or leachate break-out.

4.20 Minor positive effects are identified for strategic objectives 2 (Efficient use of minerals), 3 (Waste hierarchy), 4 (Health), 7 (Suitable locations) (for SA objective **18: Soil** only), 9 (Design) and 10 (Climate change) as they support:

- the long-term conservation of primary minerals which will reduce the need for mineral extraction and thereby any associated impacts on the environment;
- the circular economy which will divert waste from landfills reducing adverse impacts on the quality of the landscape, and the soil/water environments;
- best practice operations which may include water pollution control measures, measures to minimise water usage, the provision of SuDS onsite, and the delivery of green infrastructure which can support biodiversity and, improve the landscape and quality/stability of soils;
- locating waste development on brownfield land (unlike mineral sites which must be worked where the resource lies);
- well-designed mineral and waste developments that use land efficiently and are supported by green infrastructure that will minimise landscape and visual intrusion of the developments, provide opportunities for enhancing biodiversity, and increase the area of permeable surfaces thereby reducing flood risk; and,
- developments that help to adapt to and mitigate the impacts of climate change which can include restoring former mineral and landfill sites thereby benefitting the landscape quality of Herefordshire and providing opportunities for water storage in flood zones.

4.21 Many effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage. Negligible effects are expected for the remaining strategic objectives.

Reasonable alternative options relating to minerals

4.22 This section summarises the SA findings of the reasonable alternative options that were considered for mineral safeguarding, supply, and the future allocation of extraction sites. **Table 4.3** summarises the scores from the full SA matrices for each option.

Sand and gravel reserves

4.23 Four reasonable alternatives were considered for sand and gravel reserves:

- **Option M1:** Make no provision for additional permitted reserves of sand and gravel, on the assumption that demand will remain fairly low and sufficient landbank will remain at 2031 (scenario 2).
- **Option M2:** Make provision for some additional reserves of sand and gravel to be permitted, on the basis that demand will rise in line with the middle forecast and the landbank will fall below the minimum required by the NPPF before the end of the timeframe of the Core Strategy (scenario 1).
- **Option M3:** Make provision for significant additional reserves of sand and gravel to be permitted, on the basis that demand will rise in line with the Core Strategy housing trajectory and permitted reserves will be exhausted before the end of the MWLP timeframe (scenario 3).
- **Option M4:** Make no provision for additional permitted reserves of sand and gravel and adopt policy to meet any shortfall in demand through greater use of recycled aggregates and/or imports of sand and gravel.

4.24 Positive effects are identified for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** for options M2 (minor positive) and M3 (significant positive) as they support the provision of additional reserves of sand and gravel which will ensure there is a steady and adequate supply of minerals to meet demand, encourage long-term investment in Herefordshire's minerals sector, and generate employment opportunities for local people thereby reducing employment deprivation in the county. Options M1 and M4 will have mixed effects (significant negative/minor positive) for these SA objectives as they don't support the provision of additional reserves to meet demand from 2027 onwards (planning permission for Wellington Quarry expires in 2026) and therefore, do not encourage investment in Herefordshire's minerals industry. However, minor positive effects are identified for these options as Option M1 ensures that there is an adequate supply of minerals to meet the needs of society over the plan period (a

landbank of 9.9 years) and Option M4 aims to meet any shortfall in demand through the greater use of recycled aggregates which would encourage investment in the recycled and secondary aggregates industry.

4.25 Mixed effects (minor positive/minor negative) are expected for all options for SA objective **3: Health**. Options M1 and M4 rely on the one active sand and gravel quarry in Herefordshire to meet demand which may continue to subject the local community to the negative effects associated with its operation (e.g. dust, noise, vibration and traffic levels), however, this also reduces potential effects on previously unaffected communities as it seeks to maintain supplies from this reserve. Options M2 and M3 support the provision of new sand and gravel reserves which may have adverse impacts from their operations on the health and amenity of nearby communities, however, it is also possible that such developments may deliver green infrastructure, enhanced public rights of way, or improved access to recreation as part of the development or restoration of sites.

4.26 Options M1 and M4 will have mixed effects (significant negative/ uncertain minor positive) for SA objective **5: Sustainable Transport** as they support the continued extraction of minerals from the existing sand and gravel quarry at Wellington Quarry which transports aggregate materials locally by road and to London and the West Midlands by rail. As planning permission for this quarry expires in 2026 and without the provision of additional reserves, it is likely that minerals will need to be imported which will increase road traffic, congestion and pollution. Options M2 and M3 seek to provide additional sand and gravel reserves which will reduce the need for importing aggregate minerals, however, it is unknown whether the transport of minerals will utilise either sustainable transport modes (e.g. rail) or the road network and therefore, mixed effects (uncertain minor positive/uncertain minor negative) are identified for this SA objective.

4.27 Mixed effects are expected for SA objectives **9: Climate Change** and **15: Pollution** for Options M2 (uncertain minor positive/ uncertain minor negative) and M3 (uncertain significant positive/uncertain minor negative). These options support the provision of additional sand and gravel reserves which will meet demand from 2027 onwards thereby reducing greenhouse gas emissions associated with importing large quantities of aggregate minerals, however, it is unknown whether the transport of minerals at these sites will utilise either sustainable transport modes or the road network. Option M4 will have a mixed effect (significant positive/significant negative) for these SA objectives as it seeks to address any shortfall in demand through the import of sand and gravel which would increase greenhouse gas emissions, and through the greater use of recycled aggregates which would decrease air pollution as the use of recycled aggregates can have lower embodied energy in addition to reduced transport emissions where recycled materials are reused in close proximity to the site of reprocessing. Option M1 supports the continued extraction of minerals from Wellington Quarry which transports aggregate materials locally by road thereby increasing air pollution; however it also transports minerals further afield using sustainable transport modes resulting in a mixed effect (minor positive/minor negative) for these SA objectives.

4.28 Option M4 will have a minor positive effect on SA objective **7: Waste Hierarchy** as it supports the greater use of recycled aggregates which diverts waste materials from landfills. A significant negative effect is identified for Option M3 for SA objective **8: Mineral Resources** as it supports the significant provision of additional permitted sand and gravel reserves which will considerably increase the rate of extraction of mineral resources. Minor negative effects are identified for Options M1 and M2 for this objective as they support the continued extraction of minerals from Wellington Quarry and the provision of some additional sand and gravel reserves which will increase extraction of raw primary resources. Option M4 will have a mixed effect (minor positive/minor negative) as it promotes the greater use of recycled aggregates which will help to conserve the mineral resource in Herefordshire, however, it also supports the continued extraction of minerals from Wellington Quarry.

4.29 Uncertain minor positive effects are identified for all options for SA objective **10: Restoration** as they provide opportunities for the restoration of land at former mineral sites.

4.30 Mixed effects (uncertain minor positive/uncertain minor negative) are expected for Options M1 and M4 for SA objectives **6: Historic Environment**, **11: Biodiversity**, **12: Landscape**, **13: Water** and **16: Soil** as they rely on one active sand and gravel quarry to meet demand which may result in continued impacts on nearby heritage assets and their settings, biodiversity,

geodiversity, landscapes, water resources, and the soil environment. However, as these options seek to maintain supplies from this reserve it limits adverse impacts on previously unaffected heritage and environmental assets. The provision of additional sand and gravel reserves may also negatively impact on the historic and natural environment and therefore, Option M3 will have a mixed effect (uncertain significant negative/uncertain minor positive) as it supports significant additional reserves while Option M2 will have a mixed effect (uncertain minor positive/uncertain minor negative) as it supports the provision of some additional reserves of sand and gravel. Positive effects are identified for all options as benefits may be realised through site restoration which may improve landscapes, the setting of heritage assets, the soil environment, flood regulation (from wet restorations) while providing valuable, high-quality areas for recreation and biodiversity.

4.31 All options will have a minor positive effect on SA objective **14: Flooding** as through either the continued operation of the existing permitted sand and gravel reserve (Options M1 and M4) or the provision of additional sand and gravel reserves (Options M2 and M3), this type of development is classified as water-compatible and potentially suitable in all flood zones including 3b (the functional floodplain). Furthermore, these sites may also have the potential to increase flood capacity through their eventual restoration.

4.32 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

Crushed rock reserves

4.33 Three reasonable alternative options were considered for crushed rock reserves:

- **Option M5:** Make no provision for additional permitted reserves of crushed rock, on the assumption that reserves in the remaining operational quarry will continue to provide a sufficient landbank to meet demand over the period of the Minerals and Waste Local Plan.
- **Option M6:** Make provision for some additional reserves of crushed rock to be permitted, on the assumption that reserves in the remaining operational quarry will not provide a sufficient landbank to meet demand over the period of the Minerals and Waste Local Plan.
- **Option M7:** Make no provision for additional permitted reserves of crushed rock and adopt policy to meet any shortfall in demand through greater use of recycled aggregates and/or imports of crushed rock.

4.34 Uncertain minor positive effects are identified for Options M5 and M7 for SA objective **2: Sustainable Economy** as it is likely that the two operational crushed rock quarries will ensure that there is a steady and adequate supply of minerals to meet the needs of society in accordance with national policy. This effect is uncertain as there is not an identified landbank of this resource due to the unavailability of data on current sales and permitted reserves, however, the West Midlands AMR 2014 identifies a landbank for 33.3 years (in 2011) which is likely to significantly cover the minimum level required by the NPPF (minimum landbank of 10 years). Furthermore, Option M7 aims to meet any shortfall through the greater use of recycled aggregates which may encourage investment in this sector and generate employment opportunities in this industry (minor positive effects are also identified for SA objectives **1: Employment** and **4: Poverty and Equality** for this option). Option M6 will have minor positive effects on SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as it will make provision for some additional crushed rock reserves which will generate employment opportunities, investment in the minerals sector, and help to ensure that there is a steady and adequate supply of minerals to meet the needs of society.

4.35 Mixed effects (minor positive/minor negative) are expected for all options for SA objective **3: Health**. Options M5 and M7 rely on the two operational crushed rock quarries in Herefordshire to meet demand which may continue to subject the local community to the negative effects associated with its operation (e.g. dust, noise, vibration and traffic levels), however, this also reduces potential effects on previously unaffected communities as it seeks to maintain supplies from these reserves. Option M6 supports the provision of new crushed rock reserves which may have adverse impacts from their operations on the health and amenity of nearby communities, however, it is also possible that such developments may deliver green infrastructure, enhanced

public rights of way, or improved access to recreation as part of the development or restoration of sites.

4.36 Mixed effects (uncertain minor positive/ uncertain minor negative) are expected for all options for SA objectives **5: Sustainable Transport, 9: Climate Change** and **15: Pollution**. Options M5 and M7 support the continued extraction of minerals from the two existing operational crushed rock quarries (Perton Quarry and Leinthall Quarry) which primarily transport aggregate materials by road thereby increasing greenhouse gas emissions, however, it is possible that minerals are also transported by rail (unknown during SA assessment). Planning permission expires for Leinthall Quarry in 2027 and without the provision of additional reserves, in order to ensure there is a steady supply of minerals during the lifetime of the MWLP, it may be necessary to import crushed rock which may increase road traffic, congestion and pollution. Option M7 may also result in a decrease in emissions as the use of recycled aggregates can have lower embodied energy in addition to reduced transport emissions where recycled materials are reused in close proximity to the site of reprocessing. Option M6 seeks to provide some additional crushed rock reserves which will reduce the need for importing aggregate minerals and their associated transport emissions, however, it is unknown whether the transport of minerals will utilise either sustainable transport modes (e.g. rail) or the road network.

4.37 Option M7 will have a minor positive effect on SA objective **7: Waste Hierarchy** as it supports the greater use of recycled aggregates which diverts waste materials from landfills.

4.38 Options M5 and M7 will have minor negative effects on SA objective **8: Mineral Resources** as they support the continued extraction of minerals from the existing crushed rock quarries. A positive effect is also identified for Option M7 (as part of an overall mixed effect) as it promotes the greater use of recycled aggregates which will help to conserve the mineral resource in Herefordshire. Option M6 will have a minor negative effect as it supports the provision of additional crushed rock reserves which will increase extraction of raw primary resources.

4.39 For SA objectives **6: Historic Environment**, **11: Biodiversity** (for Option M6 only), **12: Landscape**, **13: Water Resources** and **16: Soil** mixed effects (uncertain minor positive/ uncertain minor negative) are identified for the three options. Options M5 and M7 rely on the two existing operational crushed rock quarries in Herefordshire to meet demand which may result in continued impacts on nearby biodiversity, geodiversity, heritage assets and their settings, landscapes, water resources, and the soil environment. Option M6 supports the provision of additional crushed rock reserves which could result in negative impacts to the historic and natural environment. However, as Options M5 and M7 seek to maintain supplies from these permitted reserves it limits adverse impacts on previously unaffected heritage assets and their settings, habitats, species, landscapes, water resources, or best and most versatile agricultural land. Positive effects are identified for all options as benefits may be realised through the sites' eventual restoration which may improve landscapes, the setting of heritage assets, the soil environment, flood regulation (from wet restorations) while providing valuable, high-quality areas for recreation and biodiversity.

4.40 Uncertain minor positive effects are identified for all options for SA objective **10: Restoration** as they provide opportunities for the restoration of land at former mineral sites.

4.41 Mixed effects (uncertain significant negative/uncertain minor positive) are identified for SA objective **11: Biodiversity** for options M5 and M7 as the extraction of minerals from Perton Quarry and Leinthall Quarry may result in continued impacts on nearby biodiversity and geodiversity, particularly on Perton Roadside Section and Quarry SSSI which is a designated geodiversity site. However, these options may also have a minor positive effect as they seek to maintain supplies from these permitted reserves therefore not resulting in new mineral extraction sites which may have negative impacts on previously unaffected habitats and species, and it may result in benefits for biodiversity and geodiversity through the sites' eventual restoration.

4.42 For SA objective **14: Flooding** uncertain mixed effects (uncertain minor positive/uncertain minor negative) are identified for all options as through either the continued operation of the existing crushed rock reserves (options M5 and M7) or the provision of additional reserves (option M6), crushed rock developments are suitable in all flood zones, except 3b (the functional floodplain). These sites may also have the potential to increase flood capacity through their eventual restoration.

4.43 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

Building stone reserves

4.44 Three reasonable alternative options were considered for building stone reserves:

- **Option M8:** Make no provision for additional permitted reserves of building stone, on the assumption that the quarries remaining operational over the lifetime of the MWLP will provide sufficient stone to meet demand.
- **Option M9:** Extend some or all of the permissions for existing building stone quarries/delves so that extraction can continue beyond the current required closure date in order to meet future demand.
- **Option M10:** Make provision for additional permitted reserves of building stone in order to be able to continue to meet demand over the lifetime of the Minerals and Waste Local Plan.

4.45 For SA objective **2: Sustainable Economy** a mixed effect (minor positive/uncertain minor negative) is expected for Option M8 as it supports the continued operation of the building stone quarries in Herefordshire, however, some of these quarries will cease to be operational during the lifetime of the MWLP, and without additional reserves the demand for building stone may outweigh supply. Uncertain minor positive effects are identified for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** for Option M9 as it seeks to extend some or all of the permissions for existing building stone quarries to meet future demand which would encourage investment in the minerals sector and generate employment opportunities. However, this approach is dependent on whether planning permission will be gained which is uncertain. Option M10 will have a minor positive effect as it will make provision for additional reserves which will encourage investment in the building stone industry, generate employment opportunities for local people, and help to ensure that there is a steady and adequate supply of building stone to meet the needs of society.

4.46 Mixed effects (minor positive/minor negative) are expected for all options for SA objective **3: Health**. Option M8 relies on the existing building stone quarries in Herefordshire to meet demand which may continue to subject the local community to the negative effects associated with its operation (e.g. dust, noise, vibration and traffic levels). Similarly, these local communities may experience continued adverse impacts should the permissions for some or all of these stone quarries be extended (Option M9). However, these options also reduce potential effects on previously unaffected communities as they seek to maintain supplies from these reserves. Effects for Option M9 are uncertain as this approach is depended on whether planning permission is gained. Option M10 supports the provision of new building stone reserves which may have adverse impacts from their operations on the health and amenity of nearby communities, however, it is also possible that such developments may deliver green infrastructure, enhanced public rights of way, or improved access to recreation as part of the development or restoration of sites.

4.47 Mixed effects (uncertain minor positive/ uncertain minor negative) are expected for all options for SA objectives **5: Sustainable Transport, 9: Climate Change** and **15: Pollution**. Option M8 supports the continued extraction of minerals from the existing active quarries which primarily transport aggregate materials by road thereby increasing greenhouse gas emissions, however, it is possible that minerals are also transported by rail (unknown during SA assessment). Planning permission expires for a number of quarries during the lifetime of the MWLP and without the provision of additional reserves, in order to ensure there is a steady supply of building stone, it may be necessary to import building stone which may increase road traffic, congestion and pollution. Options M9 and M10 seek to extend some or all of the permissions for existing building stone quarries and provide additional reserves which may reduce the need for importing aggregate minerals and their associated transport emissions, however, it is unknown whether the transport of minerals would utilise either sustainable transport modes (e.g. rail) or the road network.

4.48 All options will have minor negative effects on SA objective **8: Mineral Resources** as they support the extraction of building stone. Uncertain effects are identified for Option M9 as it is dependent on planning permission being granted.

4.49 For SA objectives **6: Historic Environment**, **11: Biodiversity**, **12: Landscape**, **13: Water Resources** and **16: Soil** mixed effects (uncertain minor positive/ uncertain minor negative) are identified for the three options. Options M8 and M9 may result in continued impacts on nearby biodiversity, geodiversity, landscapes, heritage assets and their settings, water resources, and the soil environment. Option M10 supports the provision of additional building stone reserves which could result in negative impacts to the historic and natural environment. However, as Options M8 and M9 seek to maintain supplies from these permitted reserves it limits adverse impacts on previously unaffected heritage assets and their settings, habitats, species, landscapes, water resources, or best and most versatile agricultural land. Positive effects are identified for all options as building stone is vital in retaining the local character of buildings and settlements. Additional benefits may be realised through the sites' eventual restoration which may improve landscapes, the setting of heritage assets, the soil environment, flood regulation (from wet restorations) while providing valuable, high-quality areas for recreation and biodiversity.

4.50 Uncertain minor positive effects are identified for all options for SA objective **10: Restoration** as they provide opportunities for the restoration of land at former mineral sites.

4.51 For SA objective **14: Flooding** uncertain mixed effects (uncertain minor positive/uncertain minor negative) are identified for all options as through either the continued operation of the existing reserves (Option M8), the extension of the operational life of some or all reserves (Option M9), or the provision of additional reserves (Option M10), building stone developments are suitable in all flood zones, except 3b (the functional floodplain). These sites may also have the potential to increase flood capacity through their eventual restoration.

4.52 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage. Effects are also uncertain for Option 9 as this approach is dependent on whether planning permission will be gained.

4.53 Negligible effects identified for SA objective **7: Waste Hierarchy.**

Hydrocarbon activity

4.54 Two reasonable alternative options were considered for hydrocarbons:

- **Option M11:** Adopt specific policies to provide a basis for determining proposals for hydrocarbon exploration, appraisal and extraction on the basis that this could become a possibility within the lifetime of the Minerals and Waste Local Plan.
- **Option M12**: Do not adopt specific policies for hydrocarbon exploration, appraisal and extraction on the basis that this is unlikely to occur within the lifetime of the Minerals and Waste Local Plan, relying instead on development management policies to determine future applications. This option recognises that associated policies may be added in a periodic review of the MWLP prior to 2031.

4.55 Option M11 ensures that there are policies in place over the lifetime of the MWLP to determine proposals for hydrocarbon exploration, appraisal and extraction should the Government issue further rounds of licencing and identify blocks in Herefordshire. This plan-led approach would ensure that any future proposals for hydrocarbon schemes are assessed for their compliance against specific policies relating to hydrocarbon exploration, appraisal and extraction which may limit potential negative impacts on communities from seismic activity (from energy extraction and fluid injection processes), noise, dust, air pollution and transport movements (SA objectives **3: Health**, **5: Sustainable Transport, 9: Climate Change** and **15: Pollution**); on biodiversity from habitat fragmentation and disturbance (**11: Biodiversity**); on the landscape and the historic environment (**12 : Landscape** and **6: Historic Environment**); on the water environment from disruption and pollution (e.g. from fracturing chemicals) of surface water and groundwater systems and flows and, abstraction of water (**13: Water** and **14: Flooding**); and on the soil environment from the loss of best and most versatile agricultural land, physical disturbance, and contamination (**16: Soil**). Therefore, uncertain minor positive effects are identified for these objectives.

4.56 Option M12 does not support the adoption of specific policies for hydrocarbon exploration, appraisal and extraction, and instead relies on development management policies to determine future applications. It is considered that this approach would provide less certainty that hydrocarbon schemes would not have adverse impacts on communities, biodiversity, air quality,

the landscape, the historic environment, and the water and soil environments as they will only be assessed against generic development management policies which may lack the necessary detail to assess the impacts of hydrocarbon proposals. However, this option also recognises that associated policies may be added in a periodic review of the MWLP prior to 2031 and therefore, mixed effects (uncertain minor positive/uncertain minor negative) are expected for these SA objectives.

4.57 An uncertain minor positive effect is expected for Option M11 for SA objective **2: Sustainable Economy** as the policies can require proposals for hydraulic fracturing, shale gas or coal bed methane not to have adverse economic impacts on other sectors such as agriculture and tourism. Option M12 does not support the adoption of specific policies and therefore, hydrocarbon proposals may be approved that have negative impacts on the growth of other industries. A mixed effect (uncertain minor positive/uncertain minor negative) is expected as it is possible that associated policies may be added in a periodic review of the MWLP.

4.58 Negligible effects are identified for both options for SA objectives **1: Employment**, **4: Poverty and Equality**, **7: Waste** and **8: Mineral Resources**.

Site allocation for future mineral extraction

4.59 Four reasonable alternative options were considered for allocating future mineral extraction sites:

- **Option M13:** Allocate suitable sites from those put forward by landowners and operators in the call for sites which comply with the policies in the Minerals and Waste Local Plan.
- **Option M14:** Do not allocate sites but identify areas of search within which applications for development will be looked upon favourably as long as they comply with the policies in the Minerals and Waste Local Plan.
- **Option M15:** Do not allocate sites and do not identify areas of search, but assess any applications regardless of location on the basis of compliance with policies in the Minerals and Waste Local Plan.
- **Option M16:** Allocate suitable sites from those put forward in the call for sites and identify areas of search within which applications for development will be looked upon favourably, but also allow for proposals for development to come forward regardless of location.

4.60 Option M16 will have significant positive effects for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as it would allocate suitable sites from those put forward in the call for sites, identify areas of search, and allow proposals for development to come forward regardless of location. This approach would provide a degree of certainty in relation to the development of new mineral extraction sites which would support the economic growth of this sector and the provision of new employment opportunities. As the plan period extends up to 2031, this approach would also provide flexibility in allocating sites that become available and economically viable in the future which may also generate employment opportunities for local people. Option M15 will have a minor negative effect for these SA objectives as it would not allocate sites in Herefordshire but would assess any applications for mineral extraction in relation to compliance with the policies of the MWLP. Although this approach may be more responsive in terms of meeting any change in requirement for minerals in the County as well as allowing for proposals at sites which may only become economically viable in the future, it would be less plan-led and would fail to provide certainty that a steady and adequate supply of minerals would be provided over the plan period and therefore future employment provision in this sector. Options M13 and M14 will both have mixed effects (minor positive/minor negative) for these SA objectives. Option M13 would only allocate sites in Herefordshire that have been put forward by landowners and operators and which comply with the policies in the MWLP. The allocation of these sites will generate employment opportunities in the minerals sector in Herefordshire. However, as the lifetime of the MWLP extends to 2031, it is likely that sites could become available and economically viable which have not been included in the recent call for sites. This approach would therefore not allow for the flexibility for the development of these sites for mineral extraction which would otherwise have encouraged investment in this sector and generated employment opportunities for local people. Option M14 would not allocate sites but identify areas of search within which applications for development would be looked upon favourably as long as they comply with the policies in the MWLP. A minor

positive effect is expected as it encourages investment in the minerals sector which will generate employment opportunities by providing some degree of prior information about where in the county such developments might be permitted. However, a minor negative effect is also expected as it is possible that it may serve to restrict development in areas outside the areas of search that are nevertheless commercially and operationally viable which would otherwise have generated employment opportunities for local people.

4.61 For SA objectives **3: Health**, **6: Historic Environment**, **11: Biodiversity**, **12: Landscape**, **13: Water Resources**, **14: Flooding** and **16: Soil** Option M13 will have mixed effects (uncertain minor positive/uncertain minor negative) as the majority of sites put forward in the call for sites are extensions to existing mineral developments which could result in continued impacts on nearby communities and the built, historic and natural environments. However, it is also possible that maintaining supplies from these reserves may reduce the number of new mineral extraction sites which may have negative impacts on previously unaffected communities, heritage assets and their settings, habitats and species, landscapes, water resources, and best and most versatile agricultural land. Uncertain minor positive effects are expected for Option M14 for these SA objectives as this approach seeks to identify suitable sites located in geographically extensive areas of search which will provide a greater choice of location options for potential mineral developments thereby allowing for the avoidance of heritage assets and their settings, best and most versatile agricultural land, flood zones, vulnerable surface and ground water resources, and areas of importance in terms of landscape character (e.g. Wye Valley AONB and Malvern Hills AONB), biodiversity, and geodiversity. Option M15 will have an uncertain minor negative effect for these SA objectives as it would not allocate sites but would assess applications for mineral extraction in relation to compliance with the policies of the MWLP. This approach would be more reactive and less likely to promote the allocation of mineral extraction sites at less sensitive locations in terms of the built, historic and natural environment. A mixed effect (uncertain minor positive/ uncertain minor negative) is identified for Option M16 for these objectives as the proposed combined approach would provide some degree of certainty in terms of the allocation of sites in relation to heritage assets, best and most versatile agricultural land, flood zones, vulnerable surface and ground water resources, and areas of importance in terms of landscape character, biodiversity, and geodiversity. However, this approach may also allow for some more speculative proposals to come forward which may have a negative impact on natural, built, heritage and cultural assets. Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.62 For SA objectives **5: Sustainable Transport**, **13: Climate Change**, and **15: Pollution** Option M13 will have a mixed effect (uncertain minor positive/uncertain minor negative) as the sites put forward in the call for sites may use either sustainable transport modes (e.g. rail) which would reduce transport emissions or the road network which would increase air pollution. Option M14 will have an uncertain minor positive effect as it provides a greater choice of location options for potential mineral developments thereby allowing for mineral sites to be allocated that are close to sustainable modes of transport. Option M15 will have an uncertain minor negative effect for these SA objectives as it would not allocate sites but would assess applications for mineral extraction in relation to compliance with the policies of the MWLP. This approach would be more reactive and less likely to promote mineral developments at locations that are within close proximity to sustainable modes of transport. A mixed effect (uncertain minor positive/ uncertain minor negative) is identified for Option M16 for these objectives as the proposed combined approach would provide some degree of certainty in terms of the allocation of sites in relation to sustainable modes of transport, but would also allow for some more speculative proposals to come forward. As minerals need to be worked where they occur, the effects for these options are uncertain as it may not be economically viable to extract minerals only from sites that are situated near sustainable transport modes.

4.63 Negligible effects are expected for SA objectives **7: Waste Hierarchy**, **8: Mineral Resources**, and **10: Restoration**.

Safeguarding mineral sites

4.64 Two reasonable alternative options were considered for safeguarding mineral sites:

- **Option M17:** Safeguard existing minerals sites and associated facilities, including transport facilities, from other development that may have the potential to constrain or prevent mineral operations at those sites, do not include a buffer around the site.
- **Option M18:** Safeguard existing minerals sites and associated facilities, including transport facilities, from other development that may have the potential to constrain or prevent mineral operations at those sites, including a buffer around the site.

4.65 Mixed effects (significant positive/uncertain minor negative) are expected for both Option M17 and M18 for SA objective **8: Mineral Resources** as they seek to safeguard existing mineral sites and their associated facilities from other development that may have the potential to constrain or prevent mineral operations. A minor negative effect is expected for Option M17 as the omission of a buffer may lead to non-mineral developments being located in close proximity to the mineral sites which may sterilise the nearby mineral resources. A minor negative effect is identified for Option M18 as applying a standard buffer may risk sterilising mineral resources as different mineral developments and land uses require different buffers to safeguard their resources.

4.66 It is recommended that the approach advocated in the *Planning Practice Guidance: Guidance on the planning for mineral extraction in plan making and the application process* is applied where separation distances/buffer zones are established on a site-specific basis rather than applying a standard buffer. Any proposed separation distances should be effective, justified and reasonable.

4.67 For SA objective **11: Biodiversity and Geodiversity**, both options will have mixed effects (significant positive/uncertain minor negative) as through safeguarding, geological formations may be preserved and in some instances created which should contribute to maintaining and enhancing geodiversity. Uncertain minor negative effects are identified as the safeguarding of existing mineral sites may lead to more mineral extraction activity that could have an adverse impact on biodiversity.

4.68 Mixed effects (uncertain minor positive/uncertain minor negative) are identified for both options for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality**. Minor positive effects are expected for both options as they seek to safeguard existing mineral sites and their associated facilities from other development that may have the potential to constrain or prevent mineral operations, which will support the development and growth of the minerals economy in Herefordshire and generate employment opportunities for local people. A minor negative effect (as part of an overall mixed effect) is expected for Option M18 as including a buffer around mineral sites may potentially restrict non-mineral developments which could have a negative effect on economic growth and employment opportunities. Conversely, a minor negative effect (as part of an overall mixed effect) is expected for Option M17 as the omission of a buffer may lead to non-mineral developments being located in close proximity to the mineral sites which may sterilise the nearby mineral resources and thereby limit the growth of the minerals economy and reduce the number of people employed in the sector.

4.69 For SA objectives **6: Historic Environment**, **12: Landscape**, **13: Water Resources** and **16: Soil** an uncertain minor negative effect is identified for Option M17 and a mixed effect (uncertain minor positive/ uncertain minor negative) is expected for Option M18. The negative effects are identified as both options seek to safeguard existing mineral sites which may encourage more extraction activities that could have adverse impacts on heritage assets and their settings, landscape character and quality, quantity and quality of water resources, and on the soil environment. Positive effects are expected for Option M18 as it includes a buffer zone which can ensure there is sufficient distance between mineral sites and sensitive land uses such as sites of historic significance and nature conservation sites. A buffer zone can also protect the area surrounding the mineral site including the character and appearance of the area, vulnerable surface and ground water resources, and areas of best and most versatile agricultural land.

4.70 Uncertain minor negative effects are identified for both options for SA objective **14: Flooding** as, depending on the type of facility, its development may or may not be suitable in the Flood Zones (e.g. mineral working/processing facilities are suitable in all Flood Zones excluding 3b [the functional floodplain], and sand and gravel working is suitable in all Flood Zones). An uncertain

minor positive effect (as part of an overall mixed effect) is expected for Option M18 as it includes a buffer zone which can safeguard areas at risk of flooding surrounding the mineral site.

4.71 Uncertain mixed effects (uncertain minor positive/uncertain minor negative) are identified for both options for SA objectives **5: Sustainable Transport**, **9: Climate Change**, and **15: Pollution** as they seek to safeguard existing mineral sites and their associated facilities, including transport facilities, which may either support the transportation of minerals by sustainable modes (e.g. rail) thereby reducing greenhouse gas emissions or via the road network which would increase air pollution. Both options seek to safeguard existing mineral sites which may lead to more mineral extraction activity that could increase dust, light, and noise pollution and therefore minor negative effects have been identified for both options for SA objective **3: Health**. Option M18 will have an uncertain positive effect (as part of an overall mixed effect) as it includes a buffer to ensure that there is sufficient distance between mineral activities and other forms of development (e.g. housing) which may protect residents from the noise and dust created from mineral working.

4.72 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.73 Negligible effects are identified for SA objectives **7: Waste Hierarchy** and **10: Restoration**.

Table 4.3 Summary of SA scores for options relating to mineral development

SA Objective	Option M1	Option M2	Option M3	Option M4	Option M5	Option M6	Option M7	Option M8	Option M9	Option M10	Option M11	Option M12	Option M13	Option M14	Option M15	Option M16	Option M17	Option M18
1. Employment	0	+	++	0	0	+	+	0	+?	+	0	0	+/-	+/-	-	++	+/-?	+/-?
2. Sustainable Economy	+/--	+	++	+/--	+?	+	+?	+/-?	+?	+	+?	+?/-?	+/-	+/-	-	++	+/-?	+/-?
3. Health	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+?/-?	+/-	+?	+?/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?
4. Poverty and Equality	0	+	++	0	0	+	+	0	+?	+	0	0	+/-	+/-	-	++	+/-?	+/-?
5. Sustainable Transport	+/--?	+?/-?	+?/-?	+/--?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	+?/-?	+?/-?
6. Built & Historic Environment	+?/-?	+?/-?	--?/+?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?
7. Waste Hierarchy	0	0	0	+	0	0	+	0	0	0	0	0	0	0	0	0	0	0
8. Mineral Resources	-	-	--	+/-	-	-	+/-	-	-?	-	0	0	0	0	0	0	++/-?	++/-?
9. Climate Change	+/-	+?/-?	++?/-?	++/--	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	+?/-?	+?/-?
10. Restoration	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?	+?/-?	0	0	0	0	0	0
11. Biodiversity	+?/-?	+?/-?	+?/--?	+?/-?	--?/+?	+?/-?	--?/+?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	++/-?	++/-?
12: Landscape	+?/-?	+?/-?	+?/--?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?
13: Water	+?/-?	+?/-?	+?/--?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?
14: Flooding	+	+	+	+	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?
15. Pollution	+/-	+?/-?	++?/-?	++/--	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	+?/-?	+?/-?
16: Soil	+?/-?	+?/-?	+?/--?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?

Reasonable alternative options relating to waste

4.74 This section summarises the SA findings of the reasonable alternative options that were considered for safeguarding waste sites, the delivery of waste management facilities, and the future allocation of waste sites. **Table 4.4** summarises the scores from the full SA matrices for each option.

Capacity for managing local authority collected waste (LACW)

- **Option W1:** Do not identify sites to manage LACW over the lifetime of the MWLP. Monitor quantities of LACW generated and keep forecasts of future generation under review. Include policy within the MWLP to allow proposals to come forward for new capacity to manage LACW in the event that this is required in the future.

4.75 A mixed effect (significant negative/minor positive) is identified for SA objective **7: Waste Hierarchy** as the approach proposed by this option would not identify sites for the management of LACW over the lifetime of the MWLP resulting in appropriate facilities to allow for the treatment of waste higher up the waste hierarchy not being delivered through a plan-led approach. However, this option would also allow proposals to come forward for new capacity to manage LACW in the event that this is required in the future which is a more flexible approach in terms of meeting any change in waste generation over the plan period.

4.76 SA objectives **9: Climate Change** and **15: Pollution** will have a mixed effect (significant negative/minor positive) and SA objective **5: Sustainable Transport** will have a minor negative effect as there is currently no residual waste treatment or disposal capacity for LACW in Herefordshire and therefore, LACW is exported for treatment and disposal to Worcestershire. Exporting large quantities of waste to Worcestershire by road will continue to contribute to road traffic, congestion and the release of greenhouse gas emissions. The uncertain minor positive effects (for SA objectives 9: Climate Change and 15: Pollution) are identified as this option allows for applications to come forward in the future which may include proposals for recycling of bio-waste (food and garden waste) which would help to reduce greenhouse gas emissions generated by bio-waste at landfill sites.

4.77 Minor negative effects are expected for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as this option does not support the identification of sites for the management of LACW over the lifetime of the MWLP and relies on policy to allow new proposals to come forward which would provide less certainty on when and where development of new waste management facilities may take place. This approach may therefore have adverse impacts on the economic growth of the waste management sector and any potential contribution these facilities could have in terms of employment opportunities.

4.78 An uncertain minor negative effect is expected for SA objective **3: Health** as it proposes a more reactive approach to future development which could increase the potential for developments to have adverse impacts on the health and amenity of communities (e.g. odour, noise, traffic). Furthermore, this option supports the transportation of LACW for treatment and disposal to areas outside of Herefordshire which will continue to subject communities to transport-related emissions.

4.79 SA objectives **6: Historic Environment**, **11: Biodiversity**, **12: Landscape, 13: Water Resources**, and **14: Flooding** will have uncertain minor negative effects as this approach would be more reactive to the proposals of developers and may result in new schemes coming forward in areas that are vulnerable to flood risk or at locations that are valued for their heritage assets, landscape character, or biodiversity and geodiversity assets.

4.80 A mixed effect (uncertain minor positive/uncertain minor negative) is expected for SA objective **16: Soil** as this option allows for proposals to come forward for new capacity to manage LACW such as the separate collection of bio-waste for recycling which would improve the nutrient content of soils thereby improving soil quality. However, as this option does not support the allocation of sites for the management of LACW, there is potential for applications to be proposed in areas which contain best and most versatile agricultural land. Furthermore, this approach is

less able to direct new waste management facilities to brownfield land in preference to greenfield locations.

4.81 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.82 Negligible effects are identified for the remaining SA objectives for this option.

Capacity for managing commercial and industrial waste (C&I)

- **Option W2:** Identify and allocate sites suitable for accommodating C&I waste recycling/recovery/disposal capacity.
- **Option W3:** Do not allocate sites to provide new capacity to manage C&I waste over the lifetime of the MWLP. Monitor quantities of C&I waste generated and keep forecasts of future generation under review. Include policy within the MWLP to allow proposals to come forward for new residual C&I waste treatment/disposal capacity in the event that this is required in the future.

4.83 Option W2 will have minor positive effects for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as it will identify and allocate sites suitable for C&I waste recycling/recovery/disposal which will support investment and growth of the waste economy in Herefordshire and generate employment opportunities for local people. Option W3 will have minor negative effects for these SA objectives as it will not allocate sites suitable for accommodating C&I waste but will rely on policy within the MWLP to allow proposals to come forward for new residual C&I waste treatment/disposal in the event that this is required in the future which would provide less certainty on when and where development of new waste management facilities may take place. This approach may therefore have adverse impacts on the economic growth of the waste management sector and any potential contribution these facilities could have in terms of employment opportunities.

4.84 According to the Herefordshire Minerals and Waste Local Plan Issues and Options Report, by the end of the plan period there could be a requirement of between 50,000 to 60,000 tonnes of residual C&I waste treatment/disposal capacity. Therefore, a significant positive effect is expected for Option W2 for SA objective **7: Waste Hierarchy** as it supports the allocation of new C&I waste management facilities which will provide facilities for recycling, energy recovery and appropriate waste disposal of residual C&I waste in the County. A mixed effect (significant negative/minor positive) is identified for this objective for Option W3 as it would not identify sites for new C&I waste treatment facilities over the lifetime of the MWLP resulting in appropriate facilities to allow for the treatment of waste higher up the waste hierarchy not being delivered through a plan-led approach. However, this option would also allow proposals to come forward for new C&I waste management facilities in the event that this is required in the future which may provide an opportunity for waste facilities to be developed that meet any change in waste generation over the plan period.

4.85 Mixed effects are expected for SA objectives **5: Sustainable Transport** (minor positive/minor negative), **9: Climate Change** (significant positive/minor negative) and **15: Pollution** (significant positive/minor negative) for Option W2 as the provision of new C&I waste management facilities will reduce the requirement for cross boundary vehicular traffic associated with waste treatment and disposal which will reduce road traffic, congestion and the release of greenhouse gas emissions. Furthermore, this approach will also increase the capacity for the recycling and recovery of waste which would help to reduce greenhouse gas emissions generated by C&I waste at landfill sites. However, new sites for the treatment of residual C&I waste have the potential to generate large numbers of vehicle movements which would contribute to road traffic, congestion and the release of greenhouse gas emissions. Mixed effects (significant negative/uncertain minor positive) are identified for SA objectives **9: Climate Change** and **15: Pollution** and a minor negative effect is expected for SA objective **5: Sustainable Transport** for Option W3 as residual C&I waste will continue to be exported to facilities outside Herefordshire for treatment and disposal which will contribute to road traffic, congestion and the release of transport-related emissions. The uncertain minor positive effects (for SA objectives 9: Climate Change and 15: Pollution) are identified as Option W3 allows for applications to come forward in the future that may include proposals for new residual C&I waste treatment facilities which would

help to reduce the amount of C&I waste being transported to landfill sites thereby decreasing the emission of greenhouse gases.

4.86 Option W2 will have a mixed effect (uncertain minor positive/uncertain minor negative) for SA objective **3: Health** as it seeks to identify and allocate sites suitable for processing C&I waste which, dependent on the nature of the processes involved, may have adverse effects from their operations on the health and amenity of nearby communities (e.g. from odour, noise, etc.). Waste management facilities have the potential to generate significant numbers of vehicle movements which would also have negative impacts on health and wellbeing, however, this approach would also reduce the need for transporting C&I waste further afield for processing which would reduce negative effects such as air pollution and emissions. Furthermore, the plan–led approach proposed by this option may promote residual C&I waste developments at locations that are at an appropriate distance from residential properties thereby limiting adverse impacts on health and wellbeing. An uncertain minor negative effect is expected for this SA objective as it proposes a more reactive approach to future development which could increase the potential for developments to have adverse impacts on the health and amenity of communities. Furthermore, this option supports the transportation of LACW for treatment and disposal to areas outside of Herefordshire which will continue to subject communities to transport-related emissions.

4.87 Environmental SA objectives **6: Historic Environment**, **11: Biodiversity**, **12: Landscape, 13: Water Resources, 14: Flooding** and **16: Soil** will have an uncertain minor positive effect on Option W2 as it supports a plan-led approach for the development of new C&I waste management facilities which is likely to promote development at less sensitive locations in terms of the built, historic and natural environment. Option W3 will have uncertain minor negative effects for these SA objectives as this option proposes a more reactive approach to future development which could increase the potential for developments to result in adverse impacts on heritage assets, landscape character, vulnerable surface water and ground water resources, best and most versatile agricultural land, and biodiversity and geodiversity assets.

4.88 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.89 Negligible effects are identified for the remaining SA objectives for these options.

Non-hazardous construction, demolition and excavation waste recovery (CD&E)

- **Option W4:** Identify sites for allocation in the MWLP to provide new capacity for the management of non-hazardous CD&E waste.
- **Option W5:** Do not identify specific sites for allocation, but look favourably on proposals for new facilities to recover CD&E waste at the following types of site: extensions to existing waste management facilities; mineral voids.

4.90 The Waste Needs Assessment estimates that the total CD&E waste arisings could increase over the plan period to between 431,000 tonnes and 458,000 tonnes by 2031 and concludes that it is likely that there will be a need to identify strategic locations for the future management of non-hazardous CD&E waste. Therefore, Option W4 is expected to have minor positive effects for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as it will identify and allocate sites suitable for the management of this volume of non-hazardous CD&E waste which will support investment and growth of the waste economy in Herefordshire and generate employment opportunities for local people. Option W5 will have minor negative effects for these SA objectives as it will not allocate sites suitable for accommodating non-hazardous CD&E waste but will look favourable upon proposals for new facilities to recover CD&E waste at existing waste management facilities or mineral voids which would provide less certainty on when and where development of new non-hazardous CD&E facilities may take place. This approach may therefore have adverse impacts on the economic growth of the waste management sector and any potential contribution these facilities could have in terms of employment opportunities.

4.91 A significant positive effect is expected for Option W4 for SA objective **7: Waste Hierarchy** as it supports the allocation of new CD&E waste management facilities which will provide facilities for the recovery (including recycling and re-use) of CD&E waste in the County thereby supporting the movement of waste up the waste hierarchy. A mixed effect (minor positive/minor negative) is expected for Option W5 for this objective as it will not allocate sites suitable for accommodating

non-hazardous CD&E waste but will look favourably upon proposals for new facilities to recover CD&E waste at existing waste management facilities or mineral voids. The minor negative effect is expected as this approach provides less certainty in relation to the provision of these facilities and therefore may impact the movement of waste up the waste hierarchy.

4.92 Option W4 will have minor positive effects on SA objectives **5: Sustainable Transport, 9: Climate Change**, and **15: Pollution** as a plan-led approach to identifying CD&E waste facilities will help to promote the allocation of these facilities close to where waste is generated which is likely to reduce the volume of waste sent to landfill by promoting the recovery (including recycling and re-use) of CD&E waste as well as reducing the requirement for vehicular traffic associated with waste management within and across local authority boundaries thereby limiting greenhouse gas emissions. A mixed effect (minor positive/minor negative) is identified for these SA objectives for Option W5 as this approach provides less certainty in terms of the delivery of CD&E facilities which may result in proposals for new facilities at locations that are not well related to the sources of waste. However, this option would look favourably on proposals for new facilities as extensions to existing waste management facilities or mineral voids. Therefore, mixed effects are expected as, where development will not be allocated as extensions to existing waste management facilities, failure to allocate new sites would mean that the opportunity to locate waste management facilities in close proximity to sources of waste may be missed resulting in an increase in journeys to process waste and associated greenhouse gas emissions.

4.93 SA objectives **3: Health**, **6: Historic Environment**, **11: Biodiversity**, **12: Landscape, 13: Water Resources, 14: Flooding** and **16: Soil** will have an uncertain minor positive effect on Option W4 as it supports a plan-led approach for the development of new CD&E waste management facilities which is likely to promote development at less sensitive locations in terms of the built, historic and natural environment. Option W5 will have mixed effects (uncertain minor positive/uncertain minor negative) for these SA objectives as this option proposes a more reactive approach to future development which could increase the potential for developments to result in adverse impacts on communities, heritage assets, landscape character, vulnerable surface water and ground water resources, best and most versatile agricultural land, and biodiversity and geodiversity assets. However, this approach will also look favourably on proposals for extensions to existing waste management facilities and mineral voids which may reduce the potential for adverse effects on previously unaffected communities and, environmental and heritage assets.

4.94 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.95 Negligible effects are identified for the remaining SA objectives for these options.

Agricultural waste facilities

- **Option W6**: Do not allocate any sites for the location of new facilities to meet agricultural waste, but allow proposals for anaerobic digestion or other types of biomass facilities on farms to be considered on their merits as they arise.
- **Option W7**: Include policy to require adequate provision for the management and disposal of waste materials, liquids and litter from agricultural activities.

4.96 Option W6 will have a mixed effect (significant positive/uncertain minor negative) for SA objective **7: Waste Hierarchy** as it does not support the allocation of sites for new facilities to treat agricultural waste but would allow for proposals for anaerobic digestion or other types of biomass facilities on farms to be considered on the merits of the proposed development. This approach should help to promote energy recover from agricultural waste and avoid the disposal of waste at landfill. However, this approach does not require an adequate provision of waste management facilities which may result in uncertainty in terms of the future provision of facilities if agricultural waste production was to increase in Herefordshire. Option W7 will have a significant positive effect as it would provide policy to require the delivery of sufficient facilities to manage waste from agricultural activities which is likely to support the treatment of waste higher up the waste hierarchy and would address any local growth in agricultural waste production through an appropriate plan-led approach.

4.97 Option W6 will have a minor positive effect for SA objectives **5: Sustainable Transport, 9: Climate Change** and **15: Pollution** as it does not support the allocation of sites for new facilities

to meet agricultural waste but does allow proposals for anaerobic digestion or other types of biomass facilities on farms to be considered on their individual merits. This approach promotes energy recovery from agricultural waste thereby reducing greenhouse gas emissions at landfills and supports the management of agricultural waste on site thereby reducing the need to transport this type of waste and the associated transport emissions. Due to the extensive number of farms within Herefordshire and little evidence of which farms currently have on-farm anaerobic digestion facilities to underpin a spatial strategy, an uncertain effect is identified for Option W7 for SA objective **5: Sustainable Transport** as it is unclear how new waste management facilities specific to agriculture could be provided in a manner as to limit transporting agricultural waste. Uncertain minor positive effects are expected for this option for SA objectives **9: Climate Change** and **15: Pollution** as the delivery of new facilities to treat agricultural waste would help to reduce greenhouse gas emissions at landfills. The uncertain component of this positive effect relates to how new waste management facilities could be provided which would limit transporting agricultural waste.

4.98 Mixed effects (uncertain minor positive/uncertain minor negative) are expected for Option W6 for SA objectives **6: Historic Environment**, **11: Biodiversity**, **12: Landscape**, **13: Water Resources** and **16: Soil** as is seeks not to allocate sites for new facilities but to allow proposals for anaerobic digestion or other types of biomass facilities on farms to be considered on the merits of the proposed development which offers little control as to where such developments are proposed in relation to areas that are sensitive or valued for their biodiversity, geodiversity, heritage, landscape character or soil quality. However, proposals will be considered with reference to relevant local plan policy which is likely to limit any significantly adverse impacts on the natural environment. Option W7 will have uncertain minor positive effects for these SA objectives as it would include a policy to require the adequate provision of facilities for the management and disposal of agricultural waste which may allow the allocation of specific land for the delivery of these new facilities at locations that are less sensitive in terms of the built, historic, and natural environment. Option M6 will also have a mixed effect for SA objective **13: Water Resources** as it will allow proposals for the appropriate treatment of agricultural waste which may prevent pollution of water bodies from run-off (e.g. from livestock waste, manure, slurry). The uncertain minor negative effect is expected as this approach does not require increased provisions of waste management facilities to be provided which may result in any future change in agricultural production not being appropriately treated and potentially having adverse impacts on local designated water bodies including the River Wye SAC. Option W7 will have an uncertain minor positive effect for this SA objective as it would provide for appropriate facilities to manage agricultural waste thereby reducing the threat of pollution of water courses from this source of waste.

4.99 Option W7 will have a minor positive effect for SA objectives **1: Employment** and **4: Poverty and Equality** as it supports the adequate provision of new facilities to meet any increased growth of agriculture (and associated growth in agricultural waste production) which would generate some employment opportunities in this industry.

4.100 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.101 Negligible effects are identified for the remaining SA objectives for these options.

Hazardous waste facilities

- **Option W8:** Do not allocate any sites for the location of new hazardous waste facilities, but allow proposals on industrial sites to be considered on their merits as they arise.

4.102 There is one hazardous waste transfer and treatment facility in Herefordshire and according to the Waste Needs Assessment, it is estimated that the annual hazardous waste arising in the future will be in the range of 9,000 to 12,000 tonnes. As the generation level of this waste stream is relatively small, it is unlikely to warrant the development of specialist waste treatment capacity. Furthermore, the report concluded that due to the location of the county, it is unlikely to be a destination chosen for a nationally significant infrastructure project[66], and smaller facilities should

[66] Hazardous waste treatment and disposal facilities are considered at a national level because of the need to account for economies of scale.

be capable of being accommodated on industrial estates and similar locations. An uncertain significant positive effect is expected for SA objective **7: Waste Hierarchy** as it will consider proposals for the treatment of hazardous waste on their individual merits which could allow for hazardous waste recycling and the movement of waste higher up the waste hierarchy.

4.103 As the Waste Needs Assessment identifies that the generation levels of waste streams are relatively small and are unlikely to warrant the development of specialist waste treatment capacity, hazardous waste will continue to be transported to the current operational hazardous waste transfer and treatment facility in Herefordshire or further afield for processing which will continue to negatively impact on road traffic, congestion and the emission of greenhouse gases. This option promotes the co-location of waste management facilities on industrial sites which may constitute an important source of waste arisings or a market for processed waste materials thereby reducing the distance that hazardous waste needs to be transported and the emission of greenhouse gases. Therefore, mixed effects (uncertain minor positive/uncertain minor negative) are identified for SA objectives **5: Sustainable Transport**, **9: Climate Change**, and **15: Pollution**.

4.104 Uncertain minor positive effects are identified for SA objective **3: Health** as this option will consider proposals on industrial sites on their individual merits which are likely to be located away from sensitive receptors such as schools, hospitals and residential developments thereby limiting the potential for adverse effects on health and amenity. A mixed effect (uncertain minor positive/uncertain minor negative) is identified for SA objective **12: Landscape** as proposals for hazardous waste developments at industrial sites are likely to be located in areas of reduced value in terms of their landscape character and quality thereby protecting high quality landscapes. The uncertain minor negative effect is identified as there may be visual impacts from the development of hazardous sites. An uncertain minor negative effect is expected for SA objective **11: Biodiversity** as development on industrial sites would result in the loss of habitats for biodiversity. For SA objective **16: Soil**, mixed effects (uncertain minor positive/uncertain minor negative) are expected as this option will consider proposals on industrial sites on their individual merits which are likely to be located on brownfield land thereby protecting greenfield locations. However, it is possible that the allocation of additional sites for the management of hazardous waste may result in contamination of soils.

4.105 Uncertain effects are identified for SA objectives **6: Historic Environment** and **13: Water Resources** as the effects on the historic and water environments are unknown and will depend on whether there is a future need for a hazardous waste treatment site and the location, scale and design of the development.

4.106 Negligible effects are identified for the remaining SA objectives for this option.

Site allocation for new waste facilities

- **Option W9:** Allocate suitable sites from those put forward by landowners and operators in the call for sites which comply with the policies in the Minerals and Waste Local Plan.
- **Option W10**: Do not allocate sites but identify types of sites or types of location within which applications for development will be looked upon favourably as long as they comply with the policies in the Minerals and Waste Local Plan.
- **Option W11:** Do not allocate sites and do not identify types of sites or types of location, but assess any applications regardless of location on the basis of compliance with policies in the Minerals and Waste Local Plan.
- **Option W12:** Allocate suitable sites from those put forward in the call for sites and identify types of sites or types of location within which applications for development will be looked upon favourably, but also allow for proposals for development to come forward regardless of location.

4.107 Option W12 will have significant positive effects for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** as it would allocate suitable sites from those put forward in the call for sites, identify types of sites or types of locations within which applications would be looked upon favourably, and allow proposals for development to come forward regardless of location. This approach would provide a degree of certainty in relation to the development of new waste management facilities which would support the economic growth of

this sector and the provision of new employment opportunities. As the plan period extends up to 2031, this approach would also provide flexibility in allocating sites that become available and economically viable in the future which may also generate employment opportunities for local people. Option W11 will have a minor negative effect for these SA objectives as it would not allocate sites or identify types of sites or types of locations but would assess any application regardless of location on the basis of compliance with the policies in the MWLP. Although this approach may be more responsive in terms of meeting any change in requirement for waste developments in the County as well as allowing for proposals at sites which may only become available and economically viable in the future, it would be less plan-led and would fail to provide certainty that waste needs would be met over the plan period and therefore future employment provision in this sector. Option W9 would only allocate sites in Herefordshire that have been put forward by landowners and operators and which comply with the policies in the MWLP. The allocation of these sites will generate employment opportunities in the waste sector in Herefordshire. However, as the lifetime of the MWLP extends to 2031, it is likely that sites could become available and economically viable which have not been included in the recent call for sites. This approach would therefore not allow for the flexibility for the development of these sites for waste management uses which would otherwise have encouraged investment in this sector and generated employment opportunities for local people. Option W10 would not allocate sites but identify types of sites or types of locations at which proposals for waste development will be looked upon favourably as long as they comply with the policies in the MWLP. A minor positive effect is expected as it encourages investment in the waste sector which will generate employment opportunities by providing some degree of prior information about where in the county such developments might be permitted.

4.108 For SA objective **7: Waste Hierarchy** a mixed effect (minor positive/minor negative) is identified for Option W9 as this approach supports the allocation of two waste management sites (for inert waste recycling and biomass) which would support the movement of waste up the waste hierarchy. The uncertain minor negative effect is expected as it is possible that other sites may become available and economically viable for waste uses which have not been identified at present that could help to appropriately manage waste through more sustainable methods. Option W10 will have a minor positive effect for this SA objective as this approach provides a level of certainty in terms of the type of sites and locations where waste uses might be permitted which may include the co-location of waste management facilities with other industrial processes that constitute either an important source of waste arisings or a market for processed waste materials which would enable a circular economy. Option W11 will have a minor negative effect as this approach may be more responsive in terms of meeting any change in requirement for waste developments in the county, however it would be less plan-led and would fail to provide certainty that facilities to move waste higher up the waste management hierarchy would be delivered over the plan period. A significant positive effect is identified for Option W12 as it would allocate sites in Herefordshire, identify types of sites or types of location at which proposals for waste development would be supported and also allow for proposals for this type of development to come forward regardless of location which would ensure that waste management facilities are developed over the plan period thereby supporting the movement of waste higher up the waste hierarchy.

4.109 For SA objectives **6: Historic Environment**, **11: Biodiversity**, **12: Landscape**, **13: Water Resources**, **14: Flooding** and **16: Soil** Option W9 will have mixed effects (uncertain minor positive/uncertain minor negative) as the two sites put forward in the call for sites are extensions to existing waste management developments which could result in continued impacts on the built, historic and natural environments. However, it is also possible that extending existing waste facilities may reduce the number of new waste sites which may have negative impacts on previously unaffected heritage assets and their settings, habitats and species, landscapes, water resources, and best and most versatile agricultural land. Uncertain minor positive effects are expected for Option W10 for these SA objectives as this approach seeks to identify types of sites or types of locations at which proposals for waste development will be looked upon favourably which will provide a choice of location options for potential waste developments thereby allowing for the avoidance of heritage assets and their settings, best and most versatile agricultural land, flood zones, vulnerable surface and ground water resources, and areas of importance in terms of landscape character (e.g. Wye Valley AONB and Malvern Hills AONB), biodiversity, and geodiversity. Option W11 will have an uncertain minor negative effect for these SA objectives as it

would not allocate sites but would assess applications for waste facilities in relation to compliance with the policies of the MWLP. This approach would be more reactive and less likely to promote development at less sensitive locations in terms of the built, historic and natural environment. A mixed effect (uncertain minor positive/ uncertain minor negative) is identified for Option W12 for these objectives as the proposed combined approach would provide some degree of certainty in terms of the allocation of sites in relation to heritage assets, best and most versatile agricultural land, flood zones, vulnerable surface and ground water resources, and areas of importance in terms of landscape character, biodiversity, and geodiversity. However, this approach may also allow for some more speculative proposals to come forward which may have a negative impact on natural, built, heritage and cultural assets.

4.110 Uncertain minor positive effects are expected for SA objectives **5: Sustainable Transport**, **9: Climate Change** and **15: Pollution** for Option W10 as it does not support allocating sites but will identify types of sites or types of location within which applications for development will be looked upon favourably. This approach allows for flexibility in terms of locating waste developments near to the source of arisings, or near to sites which could be a potential market for outputs from the waste facility which would minimise the distance that waste has to travel and the emission of greenhouse gases. A mixed effect (uncertain minor positive/uncertain minor negative) is also identified for SA objective **3: Health** for this option as reducing waste transport and its associated greenhouse gas emissions will have a beneficial impact on the health of the residents of Herefordshire. The uncertain minor negative effect is identified as it is likely that waste facilities will be located close to urban areas (i.e. near to the source of arisings) which may have adverse impacts on the health and amenity of communities from noise, odour and traffic congestion/ pollution. Option W11 will have an uncertain minor negative effect for these SA objectives as it would not allocate sites but would assess applications for waste use in relation to compliance with the policies of the MWLP. This approach would be more reactive and less likely to promote locating waste facilities close to urban areas or suitable transport networks, or the co-location of waste management facilities with other industrial processes that constitute either an important source of waste arisings or a market for processed waste materials thereby potentially increasing the distance waste needs to be transported for treatment or disposal. Mixed effects (uncertain minor positive/uncertain minor negative) are identified for Options W9 and W12. Option W9 proposes only to allocate the two sites promoted through the call for sites process (both expansions to existing sites for inert waste recycling and biomass treatment) which may use either sustainable transport modes (e.g. rail or water routes) which would reduce transport emissions or the road network which would increase air pollution. Furthermore, this option will reduce greenhouse gas emissions from landfills by supporting recycling of inert waste (e.g. sand, concrete) and biomass waste-to-energy conversion. However, this option is also less flexible in meeting any change in requirements for waste uses which may result in higher volumes of waste being sent to landfill which would contribute to higher emissions of greenhouse gases. Option W12 proposes a combined approach which would provide some degree of certainty in terms of the allocation of sites in relation to sustainable modes of transport, but would also allow for some more speculative proposals to come forward which may be located away from the source of waste or from sustainable modes of transport or a suitable transport network.

4.111 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.112 Negligible effects are identified for the remaining SA objectives for these options.

Safeguarding waste sites

- **Option W13:** Safeguard existing waste sites and associated facilities, including transport facilities, from other development that may have the potential to constrain or prevent waste operations at those sites, do not include a buffer around the site.
- **Option W14:** Safeguard existing waste sites and associated facilities, including transport facilities, from other development that may have the potential to constrain or prevent waste operations at those sites, including a buffer around the site.

4.113 For SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty and Equality** mixed effects (minor positive/ minor negative) are expected for Option W13 while minor positive effects are identified for Option W14. The positive effects are expected for both options as they

seek to safeguard existing waste sites and their associated facilities from other development that may have the potential to constrain or prevent waste operations, which will support the development and growth of the waste economy in Herefordshire and generate employment opportunities for local people. A minor negative effect (as part of an overall mixed effect) is expected for Option W14 as including a buffer around waste sites may potentially restrict non-waste developments which could have a negative effect on economic growth and employment opportunities. Conversely, a minor negative effect (as part of an overall mixed effect) is expected for Option W13 as the omission of a buffer may lead to developments located in close proximity to the waste sites being adversely affected by the operation of waste management facilities which could impact on economic growth and employment opportunities.

4.114 Significant positive effects are identified for both options for SA objective **7: Waste Hierarchy** as they seek to safeguard existing waste sites and their associated facilities which protects waste management facilities that promote the re-use, recovery and recycling of waste.

4.115 For SA objectives **6: Historic Environment**, **11: Biodiversity and Geodiversity, 12: Landscape**, **13: Water Resources, 14: Flooding** and **16: Soil** an uncertain minor negative effect is identified for Option W13 and a mixed effect (uncertain minor positive/ uncertain minor negative) is expected for Option W14. The negative effects are identified as both options seek to safeguard existing waste sites which may encourage more waste management activities that could have continued adverse impacts on heritage assets and their settings, biodiversity and geodiversity, landscape character and quality, and on the water and soil environments. Positive effects are expected for Option W14 as it includes a buffer zone which can ensure there is sufficient distance between waste sites and sensitive land uses such as sites of historic significance, nature conservation sites or areas at risk of flooding. A buffer zone can also protect the area surrounding the mineral site including the character and appearance of the area, vulnerable surface and ground water resources, and areas of best and most versatile agricultural land.

4.116 Uncertain mixed effects (uncertain minor positive/uncertain minor negative) are identified for both options for SA objectives **5: Sustainable Transport**, **9: Climate Change**, and **15: Pollution** as they seek to safeguard existing waste sites and their associated facilities, including transport facilities, which may either support the transportation of waste by sustainable modes (e.g. rail) thereby reducing greenhouse gas emissions or via the road network which would increase air pollution. Furthermore, the safeguarding of existing waste sites also promotes the re-use and recycling of, as well as energy recovery from waste, which will reduce the volume of waste disposed of at landfill thereby reducing greenhouse gas emissions.

4.117 An uncertain minor negative effect is identified for SA objective **3: Health** for Option W13 as sensitive receptors (such as residential properties, schools, hospitals) may be located in close proximity to waste management facilities. Although operational standards at waste management facilities have been much improved in recent times, there may be some adverse impacts on public health or amenity given the potential for increased light, odour and noise associated with waste treatment processes. Option W14 will have an uncertain positive effect as it includes a buffer to ensure that there is sufficient distance between waste management facilities and other forms of development which may reduce the potential for adverse impacts on public health or amenity.

4.118 Effects are uncertain as it will depend on the scale, location and design of the developments which will not be known until planning application stage.

4.119 Negligible effects are identified for SA objectives **8: Waste Resources** and **10: Restoration**.

Table 4.4 Summary of SA scores for options relating to waste development

SA Objective	Option W1	Option W2	Option W3	Option W4	Option W5	Option W6	Option W7	Option W8	Option W9	Option W10	Option W11	Option W12	Option W13	Option W14
1. Employment	-	+	-	+	-	0	+	0	+/-	+	-	++	+/-	+/-
2. Sustainable Economy	-	+	-	+	-	0	0	0	+/-	+	-	++	+/-	+/-
3. Health	-?	+?/-?	-?	+?	+?/-?	0	0	+?	+?/-?	+?/-?	-?	+?/-?	-?	+?
4. Poverty and Equality	-	+	-	+	-	0	+	0	+/-	+	-	++	+/-	+/-
5. Sustainable Transport	-	+/-	-	+	+/-	+	?	+?/-?	+?/-?	+?	-?	+?/-?	+?/-?	+?/-?
6. Built & Historic Environment	-?	+	-	+?	+?/-?	+?/-?	+?	?	+?/-?	+?	-?	+?/-?	-?	+?/-?
7. Waste Hierarchy	--/+	++	--/+	++	+/-	++/-?	++	++?	+/-	+	-	++	++	++
8. Mineral Resources	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9. Climate Change	--/+?	++/-	--/+?	+	+/-	+	+?	+?/-?	+?/-?	+?	-?	+?/-?	+?/-?	+?/-?
10. Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Biodiversity	-?	+?	-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	+?	-?	+?/-?	-?	+?/-?
12: Landscape	-?	+?	-?	+?	+?/-?	+?/-?	+?	+?/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?
13: Water	-?	+?	-?	+?	+?/-?	+?/-?	+?	?	+?/-?	+?	-?	+?/-?	-?	+?/-?
14: Flooding	-?	+?	-?	+?	+?/-?	0	0	0	+?/-?	+?	-?	+?/-?	-?	+?/-?
15. Pollution	--/+?	++/-	--/+?	+	+/-	+	+?	+?/-?	+?/-?	+?	-?	+?/-?	+?/-?	+?/-?
16: Soil	+?/-?	+?	-?	+?	+?/-?	+?/-?	+?	+/-?	+?/-?	+?	-?	+?/-?	-?	+?/-?

5 Conclusions and Next Steps

Conclusions

5.1 The options proposed in the Herefordshire Minerals and Waste Local Plan Issues and Options Report have been subject to a detailed appraisal against the SA objectives which were developed at the scoping stage of the SA process. In general, the options have been found to have a wide range of positive and significant positive effects on the SA objectives, although a number of potentially minor and significant negative impacts are also associated with some options.

5.2 The options lack detail and therefore are subject to greater uncertainty than will be the case at the Regulation 19 Publication stage[67], once policy wording has been drafted and potential development sites are identified.

Next steps

5.3 To meet the requirements of the SEA Directive, this SA Report is being published for consultation alongside the Herefordshire Minerals and Waste Local Plan for an eight week consultation period from August to October 2017. Further SA work and revised SA Reports will accompany consultation on subsequent stages of the Herefordshire Minerals and Waste Local Plan. The SA Reports will be updated to reflect the emerging policies and site allocations, and to take account of any consultation responses received at each stage.

[67] Regulation 19 of the Town and County Planning (Local Planning) (England) Regulations 2012