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Sustainability Appraisal of the Draft Herefordshire Minerals and Waste Local Plan

Non-Technical Summary

Prepared by LUC
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Introduction

This Non-Technical Summary (NTS) relates to the Sustainability Appraisal (SA) and Strategic Environmental Assessment (SEA) of the emerging Herefordshire Minerals and Waste Local Plan (HMWLP). Although an integrated assessment of the Draft HMWLP has being undertaken, the abbreviation 'SA' is used throughout this document to refer to the SA and SEA of the Draft HMWLP.

This NTS describes how the SA process was used to assist in the preparation of the Draft HMWLP (2018), as required by planning legislation and Government guidance. It includes a summary of all of the information required by the Strategic Environmental Assessment Directive[1], transposed into law in the UK by the SEA Regulations[2] (SI 2004, No. 1633).

Herefordshire Minerals and Waste Local Plan

Herefordshire Council is currently preparing a new Minerals and Waste Local Plan (Regulation 18 Draft Plan stage). Once adopted, the HMWLP will replace the saved minerals and waste policies contained in the Herefordshire Unitary Development Plan. The HMWLP covers the period up to 31 December 2031 and applies across the administrative area of Herefordshire.

The HMWLP has been produced taking into account the National Planning Policy for Waste, Planning Practice Guidance on Minerals and Waste, up-to-date evidence base studies (the minerals and waste need assessments were updated in February 2018) and ensuring close co-operation with neighbouring local authorities on cross-boundary issues.

It provides 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 HMWLP also presents 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

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.

This NTS relates to the full SA Report of the Draft Herefordshire Minerals and Waste Local Plan (2018). The SA is being undertaken in stages alongside the preparation of the HMWLP in order to provide sustainability guidance as the plan is developed.

SA must be carried out in accordance with Government guidance and (as an integrated SA and SEA process is being undertaken) must meet the requirements of the SEA Regulations

[1] SEA Directive 2001/42/EC

[2] The Environmental Assessment of Plans and Programmes Regulations 2004 (Statutory Instrument 2004, No. 1633)

Table 1 Meeting the requirements of the SEA Regulations

SEA Regulations' Requirements	Covered in the 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 and Appendix 3
c) The environmental characteristics of areas likely to be significantly affected;	Chapter 3 and Appendix 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 and Appendix 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 Appendices 1 and 3
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);	Chapters 4-6 and Appendices 6-8
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 7
h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Chapter 2 and Appendix 4
i) a description of measures envisaged concerning monitoring in accordance with Art. 10;	Chapter 8
j) a non-technical summary of the information provided under the above headings	This separate NTS document has been prepared to accompany the SA Report.
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.
• 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 on the SA of the HMWLP Issues and Options Report was undertaken for 8 weeks between August 2017 and October 2017. Consultation is being undertaken in relation to the Draft Herefordshire Minerals and Waste Local Plan in early 2019, for a 6 week period. The current consultation document is accompanied by the SA Report.
• 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

SEA Regulations' Requirements	Covered in the SA Report
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 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)	To be addressed after the HMWLP is adopted.
Monitoring of the significant environmental effects of the plan's or programme's implementation (Art. 10)	To be addressed after the HMWLP is adopted.

The approach that has been taken for the SA of the HMWLP is described below.

SA Stage A: Scoping

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 SA process began in February 2017 with the production of a Scoping Report for the HMWLP which contained a review of plans, programmes and environmental protection objectives; baseline information; key sustainability issues; and a SA Framework, comprising the SA objectives against which options, and subsequently, sites and policies would be appraised.

The SA Framework for the HMWLP is presented in **Table 2** and outlines the 17 main SA objectives along with their associated appraisal questions, and demonstrates how all of the SEA topics have been covered by the SA objectives. The wording of some of the objectives has been revised since the Scoping Report to take into account the suggestions of the statutory consultees. Furthermore, as the SA Framework for the HMWLP is broadly similar to that used in the SA of the Hereford Area Plan DPD, the recommendations made by Historic England to separate the SA objective relating to the historic and built environment into two distinct SA objectives has been incorporated in the SA Framework (now SA objective 6: Historic Environment and SA objective 7: Built Environment). In addition, reference to historic landscapes has been removed from SA objective 13: Landscape and is now considered in SA objective 6: Historic Environment.

Table 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	2.1 Encourage long-term investment in Herefordshire's minerals and waste sectors. 2.2 Ensure a steady and adequate supply of minerals to meet the needs of society in accordance with national policy.	Material assets, population

[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
investment.		
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 & Historic Environment		
6. Value, protect and enhance 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 the Hereford Area of Archaeological Importance, Conservation Areas, Scheduled Monuments, Registered Historic Parks and Gardens Listed Buildings, archaeological remains, and areas of historical heritage and cultural value e.g. locally listed buildings.	Cultural heritage, including architectural and archaeological heritage
7. Value, protect and enhance the character and built quality of settlements and neighbourhoods.	7.1 Prevent development which is inappropriate in scale, form or design to its setting or to its function or local area.	Material assets, soil
Resource Consumption and Climate Change		
8. 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. 7.4 Promote sustainable waste management principles.	Material assets
9. 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
10. 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

SA Objective	Appraisal Question	SEA Topic covered by objective
11. 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		
12. 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
13. 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, 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
14. 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
15. 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
16. 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
17. 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

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"

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.

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

HMWLP Issues and Options Report

The HMWLP Issues and Options Report included consultation questions relating to a number of minerals and waste issues to be addressed by the HMWLP. Not all of the consultation questions identified specific options for each issue (i.e. alternative ways that the HMWLP could address the issue). Many of the consultation questions were just opinion-seeking questions and therefore were not subject to SA. The HMWLP Issues and Options Report identified options (or reasonable alternatives as they are referred to in the SEA Regulations) for the Vision, strategic objectives and the approach for addressing minerals and waste development in Herefordshire. In total, 34 options (one option for the Vision, one option for the strategic objectives, 18 mineral-related options and 14 waste-related options) were presented in the HMWLP Issues and Options Report. The options proposed in the HMWLP Issues and Options Report were subject to a detailed appraisal in the Sustainability Appraisal Report (August 2017) against the SA objectives which were developed at the scoping stage of the SA process, and a summary of the findings is provided in **Chapter 2** of the full SA Report.

Draft HMWLP

The content of the Draft HMWLP has been informed by updated mineral and waste need assessments prepared in February 2018, the Spatial Context and Sites Report, the findings of the SA of the HMWLP Issues and Options Report and the consultation responses received as part of the Regulation 18 consultation.

Draft HMWLP policies

The Draft HMWLP includes a Vision, 12 strategic objectives and 18 policies (four general policies; seven mineral-related policies; and, seven waste-related policies), which have developed from the policy approach options considered in the Issues and Options Report.

Table 3 lists the policies and site allocations currently included in the Draft HMWLP, and which have been assessed as part of the SA.

Draft HMWLP reasonable alternatives

Specific site options were not identified in the Issues and Options Report and its accompanying SA, but have been considered during the preparation of the Draft HMWLP and in the SA Report. **Appendix 4** of the full SA Report presents an audit trail of the 54 reasonable alternatives including the 41 site options (24 mineral-related sites and 17 waste-related sites) that are included in the Draft HMWLP, giving the Council's reasons for selecting or discounting different site options.

In general, the mineral site options that were not considered reasonable alternatives are those that are closed and restored, are currently being restored, or have been put to some other use. For the waste site options, a number of existing waste facilities are located on strategic employment sites or industrial estates. These sites were not appraised separately as reasonable alternatives because, although they are already in waste use, the facility is located on a plot within an industrial estate/strategic employment site that experience a reasonably high level of plot turnover which makes it inappropriate to allocate discrete plots/sites within the estates within the HMWLP. However, a number of the strategic employment locations (sites W58-W66) are identified in Herefordshire Core Strategy policy E1, and have been appraised in their entirety as reasonable alternatives (i.e. not just individual plots within the wider strategic employment

location) as they have good potential for co-location and could accommodate strategic waste facilities. Finally, some of the waste site options considered in the Spatial Context and Sites Report were not reasonable alternatives for SA as they are not located within the spatial strategy preferred area (waste development will be focused at Hereford, Leominster and the market towns in line with the overarching spatial strategy of the Core Strategy), while others were proposed mineral sites which are either closed or mothballed, or being restored, so not appropriate for waste uses.

Draft HMWLP site allocations

Recognising the advantages of working an area efficiently, sites for future sand and gravel and crushed rock extraction are proposed for allocation adjacent or near to existing permitted sites. Sand and gravel reserves at Upper Lyde (M03); Shobdon (M04); and Wellington (M05) are all proposed to be allocated in the Draft MWLP. Crushed rock reserves at Leinthall (M07) and Perton (M10) quarries are both proposed to be allocated in the HMWLP. The sand and gravel reserves at sites M03 and M05 and the crushed rock reserves at M07 and M10 are subdivided into individual parcels of land which identify the active part of the site as well as the proposed extensions (M03a-M03d, M05a-M05g, M07a, M07b, M10a and M10b). The SA appraises each parcel of land within these sites separately as not all of the parcels are proposed for allocation in the Draft HMWLP, i.e. M03c and M05f, and therefore constitute reasonable alternatives to the preferred sites proposed for allocation in the Draft HMWLP.

In addition, preferred areas of search are identified in the Draft HMWLP for working sand and gravel and crushed rock (limestone) reserves in Herefordshire.

There are six building stone delves currently permitted and active in Herefordshire, all of which would be suitable in principle to gain an extension of time to enable extraction to be completed: Callow Delve (M12); Black Hill Delve (M13); Llandraw Delve (M16); Pennsylvani Delves (M17); Sunnybank Delve (M18); and, Westonhill Wood Delve (M20). Three of these sites would also be suitable, in principle, for a lateral extension or deepening of workings: Black Hill Delve (M13); Llandraw Delve (M16); and, Westonhill Wood Delve (M20).

The Draft HMWLP supports the delivery of waste treatment facilities at industrial estates or strategic employment areas. An appraisal of the potential of co-location and the development of strategic facilities at strategic employment sites was undertaken as part of the SA. However, the potential development of waste treatment facilities at each industrial area in Herefordshire was not subject to SA as the Draft HMWLP states that it would be inappropriate to allocate discrete sites within these estates as this type of location experiences a reasonably high level of plot turnover.

The Draft HMWLP proposes the allocation of the following waste treatment sites: Leominster Household Waste Site (HWS) and Household Waste Recovery Centre (HWRC) (W05); Ledbury HWRC (W07); Kington HWRC (W10); and, the Former City Spares site, Watery Lane, Hereford (W13). The sustainable treatment of construction, demolition and excavation (CD&E) waste at active mineral workings and the disposal of inert waste at Upper Lyde Quarry, extension and adjacent sites (W43); Shobdon Quarry and extension (W44); and, Wellington Quarry, extension and adjacent sites (W45), are also proposed in the Draft HMWLP.

Table 3 Draft HMWLP Policies and Site Allocations

Draft HMWLP Policy / Site Allocation
Strategic policies
MT2: Transport within sites
SS8: Resource Management
OS4: Access to open space and recreation from minerals and waste development
SD5: Site Reclamation
Mineral-related policies
M1: Mineral Strategy

Draft HMWLP Policy / Site Allocation
M2: Safeguarding of mineral resources from sterilisation
M3: The winning and working of sand and gravel
M4: The winning and working of crushed rock (limestone)
M5: The winning and working of building stone (sandstone)
M6: Borrow Pits
M7: Unconventional hydrocarbons
Waste-related policies
W1: Waste Strategy
W2: Solid waste management requirements
W3: Agricultural waste management
W4: Waste water management
W5: Preferred locations for solid waste treatment facilities
W6: Preferred locations for construction, demolition and excavation waste facilities
W7: Waste management operational expectations
Site Allocations
M03a Upper Lyde Quarry (Sand and gravel)
M03b Land adjacent Upper Lyde Quarry (east) (Sand and gravel)
M03d Land north east of Upper Lyde Quarry (Sand and gravel)
M04 Shobdon Quarry (Sand and gravel)
M05a Wellington Quarry (Sand and gravel)
M05b Land adjacent Wellington Quarry (west) (Sand and gravel)
M05c Land adjacent Wellington Quarry (north west) (Sand and gravel)
M05d Land adjacent Wellington Quarry (Dinmore Manor Estate) (Sand and gravel)
M05e Land adjacent Wellington Quarry (east of A49) (Sand and gravel)
M05g Land east of Wellington Quarry (Sand and gravel)
M07a Leinthall Quarry (Crushed rock)
M07b Land west of Leinthall Quarry (Crushed rock)
M10a Perton Quarry (Crushed rock)
M10b Land north west of Perton Quarry (Crushed rock)
M12 Callow Delve (Building stone)
M13 Black Hill Delve (Building stone)
M16 Llandraw Delve (Building stone)
M17 Pennsylvani Delves (Building stone)
M18 Sunnybank Delve (Building stone)
M20 Westonhill Wood Delve (Building stone)
Area of Search A
Area of Search B
Area of Search C
Area of Search D
W05 Leominster HWS and HWRC (Municipal non-hazardous WTS and HWRC)

Draft HMWLP Policy / Site Allocation
W07 Ledbury (HWRC)
W10 Kington (HWRC)
W13 Former Lugg Bridge Quarry (Physical Treatment)
W19 City Spares MRS (Car Breaker)
W43 Upper Lyde Quarry (M03)
W44 Shobdon Quarry (M04) (Mineral site - inert waste disposal)
W45 Wellington Quarry (M05) (Mineral site - inert waste disposal)
W58 Rotherwas Industrial Estate (Strategic Employment Site)
W59 Westfields Trading Estate (Strategic Employment Site)
W60 Three Elms Trading Estate (Strategic Employment Site)
W61 Holmer Road, Hereford (Strategic Employment Site)
W62 Leominster Enterprise Park (Strategic Employment Site)
W63 Southern Avenue, Leominster (Strategic Employment Site)
W64 Land between Little Marcle Road and Ross Road, Ledbury (Strategic Employment Site)
W65 Model Farm, Ross-on-Wye (Strategic Employment Site)
W66 Moreton Business Park, Moreton-on- Lugg (Strategic Employment Site)

Stage C: Preparing the Sustainability Appraisal Report

The full SA Report and this NTS describes the process that has been undertaken to date in carrying out the SA of the HMWLP. It sets out the SA findings of the Vision, strategic objectives, policies and site allocations included in the Draft HMWLP as well as the reasonable alternative site options considered, 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 the SA Report

The SA Scoping Report for the HMWLP was published in February 2017 for a five week consultation period with the statutory consultees. The comments received in relation to the SA Scoping Report, and the response to these comments is included in **Appendix 8** of the full SA Report. The SA of the HMWLP Issues and Options Report was published in August 2017 for eight weeks. No consultation comments relating to the SA Report of the HMWLP Issues and Options Report were received.

Herefordshire Council is inviting comments on the Draft HMWLP and the SA Report which this NTS relates to. The NTS and SA Report are being published for consultation in early 2019, for a 6 week period. Consultation comments on both the Draft HMWLP and the SA Report will be taken into account in the next iteration of these documents.

Stage E: Monitoring the implementation of the Plan

Recommendations for monitoring the social, economic and environmental effects of implementing the Herefordshire Minerals and Waste Local Plan are presented in **Chapter 8** of the full SA Report and are described further ahead in this NTS.

Habitats Regulations Assessment

Under Article 6 (3) and (4) of the European Union Council Directive 92/43/EEC[4] on the conservation of natural habitats and of wild fauna and flora (more commonly known as the Habitats Directive) land-use plans, including Local Plans, are subject to Habitats Regulations Assessment (HRA). The Conservation of Habitats and Species Regulations 2017[5] transposes the Habitats Directive into national law. The purpose of HRA is to assess the impacts of a land-use plan against the conservation objectives of a 'European site'[6] and to ascertain whether it would adversely affect the integrity of that site.

The HRA for the HMWLP is being undertaken separately to the SA. An HRA Scoping Report was prepared by LUC on behalf of Herefordshire Council in August 2017 and related to the HMWLP Issues and Options Report (April 2017). An HRA Screening Report has been prepared in parallel with the SA of the Draft HMWLP, however, the findings have been 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).

The following European sites were included as part of the HRA Screening Stage, to determine whether the Draft HMWLP will result in 'likely significant effects' either alone, or in-combination with other plans and projects:

- River Wye SAC (physical damage/ loss of habitat, non-physical disturbance, air pollution, water quantity and quality, non-toxic contamination).
- River Clun SAC (air pollution).
- Wye Valley Woodlands SAC (air pollution).
- Wye Valley and Forest of Dean Bat Sites SAC (physical damage/loss of offsite habitat).

Of the 18 policies in the Draft HMWLP, 14 policies are unlikely to have significant effects on any of the European sites. Similarly, 33 out of the 41 sites proposed for allocation in the Draft HMWLP are unlikely to have significant effects on any of the European sites. Whilst no policies or proposed site allocations are certain to result in a significant effect, for some there is uncertainty and therefore, in line with the precautionary approach being applied in the HRA, until significant effects can be ruled out, for example following detailed consideration of each potential impact type, as detailed below, they are treated as giving rise to 'likely significant effects'.

The screening assessment identified a lack of certainty as to whether the following policies and proposed site allocations would result in likely significant effects on European sites:

- Policy *M3: The winning and working of sand and gravel*.
- Policy *M5: The winning and working of building stone (sandstone)*.
- Policy *M7: Unconventional hydrocarbons*.
- Policy *W6: Preferred locations for construction, demolition and excavation waste facilities*.
- M05: Land adjacent Wellington Quarry (west) sand and gravel (sites M05a, M05d and M05g).
- M12: Callow Delve Building stone.
- M20: Westonhill Wood Delve Building stone.
- Area of Search C.
- W45: Wellington Quarry (M05) Mineral site - inert waste disposal (sites W45a and W45d only).

The HRA Screening concluded that the Draft HMWLP could result in the following likely significant effects:

[4] European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora
[5] The Conservation of Habitats and Species Regulations 2017
[6] Special Areas of Conservation and Special Protection Areas

- River Wye SAC (physical damage and loss of habitat, non-physical disturbance, water quality, and non-toxic contamination).
- Wye Valley and Forest of Dean Bat Sites SAC (physical damage and loss of offsite functionally linked habitat).

In relation to the River Wye SAC, impacts associated with the effect of physical damage and loss were associated with site allocations M05 and W45 due to their location adjacent to the SAC and the presence of offsite functionally linked wetland habitat which may be utilised by otter. **These potential effects could be mitigated through the provision of policy safeguards within the HMWLP which require site level assessment and a commitment to, and implementation of, best practice working measures in line with a site specific mitigation and avoidance plan**. This type of avoidance and mitigation would also serve to prevent and mitigate potential effects associated with non-physical disturbance, non-toxic contamination and water quality as a result of sites M05 and W45 and policies M3, W6 and Area of Search C, and potential water quality impacts associated with sites M12, M20 and policy M5.

Policy *M7: Unconventional Hydrocarbons* broadly specifies the location of potential unconventional hydrocarbon resources in the south of the county, and associated activities may include hydraulic fracturing for gas. These activities have the potential to degrade the quality of ground water resources and whilst the policy specifies safeguards in relation to protecting European sites, **the wording of policy M7 requires strengthening to recognise that significant impacts can occur from activities occurring outside of the European site boundaries, together with a commitment to undertake site specific HRA for any such proposal as it comes forward for consideration**.

The potential for likely significant effects on the Wye Valley and Forest of Dean Bat Sites SAC was identified as a result of physical damage and loss of offsite functionally linked woodland habitat present within site allocation M12. This is considered highly precautionary, and **the risk of such an effect could be minimised through the provision of a commitment to site specific assessment where new areas of excavation and associated tree felling is proposed, and if required, the retention of a woodland periphery at the site to prevent habitat severance to horseshoe bat species**.

At this stage, it is expected that the inclusion of appropriate policy safeguards, together with a commitment to successfully implement them within the Draft HMWLP, would be expected to ensure that adverse effects on integrity will be avoided, either alone or in-combination, but this will require consideration at the Appropriate Assessment stage (alongside the Pre-Submission HMWLP), at which point formal consultation with Natural England as the statutory conservation authority will also be completed.

Appraisal methodology

The policy and site options considered in preparing the Draft HMWLP as well as the preferred Vision, strategic objectives, policies and site allocations have been appraised against the 17 SA objectives in the SA Framework (see **Table 2**), with scores being attributed to each option or element of the plan 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 1 Key to symbols and colour coding used in the SA of the Herefordshire Minerals and Waste Local Plan

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.).

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.

Assumptions applied during the SA

SA inevitably relies on an element of subjective judgement. However, in order to ensure consistency and transparency in the appraisal of the policies and sites, assumptions to help guide the approach to scoring were developed and used in the appraisal. The assumptions were tailored to inform the policy assessment and the different types of minerals and waste site allocations, and are presented in **Appendix 5** of the full SA Report. The assumptions used for the appraisal of site options relied primarily on the use of Geographical Information Systems (GIS) data.

Difficulties encountered and data limitations

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.

The SA represents a strategic appraisal of the likely significant effects of the Draft HMWLP. It considers proposed mineral and waste policies and sites for Herefordshire. The assessment has been carried out at a high level, using a combination of pre-existing information, such as the Spatial Context and Sites Report (Hendeca, 2018), the Minerals Need Assessment Update (Hendeca, 2018) and the Waste Need Assessment Update (Hendeca, 2018), spatial information in GIS, as well as from other specially commissioned assessments such as the HRA Screening Report (LUC, 2018). However, the SA is not an Environmental Impact Assessment and so detailed information about sites' constraints has not been available during the site assessment process or to extrapolate from to inform the assessment of policies. Therefore, the effects identified in the SA are presented on the basis of best available desk-based information which is not the same as the assessment of effects through detailed empirical surveys such as ecological surveys, groundwater risk assessments, etc. Furthermore, the effects identified are often qualified with uncertainty. For example, uncertain effects may be identified where there is no information on the design or scale of the operation or the type of activities undertaken within a site.

A number of potential challenges have arisen from the scope of the SA, including in particular the different types of sites that needed to be subject to appraisal and the need to ensure that this was done in a consistent manner. In order to address this issue, detailed assumptions relating to each of the SA objectives were developed and applied during the appraisal of site options. Different assumptions were prepared for new mineral and waste sites; active mineral or operational waste sites; active mineral sites requiring a time extension; active mineral sites requiring a size

extension; the disposal of inert waste at mineral sites; the areas of search; and the strategic employment areas.

The HRA Screening Report was undertaken in parallel with the SA and it was necessary to revise the assessment of policies and sites to incorporate the findings of the HRA.

The Strategic Flood Risk Assessment (SFRA) is also being undertaken in parallel with the SA, however, the timing of the reports means that it has not been possible to incorporate the findings from this assessment.

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.

No other specific data limitations or difficulties were encountered during the SA process.

Sustainability context for minerals and waste development in Herefordshire

Review of relevant plans, programmes and environmental protection objectives

The 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.

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"

In line with the requirements of the SEA Regulations, relevant international, national, regional, sub-regional and local plans have been reviewed in detail in relation to their objectives, targets and indicators and their implications for the HMWLP and the SA. The full review can be seen in **Appendix 1** of the full SA Report.

One of the most significant developments in terms of the policy context for the HMWLP has been the publication of the revised National Planning Policy Framework (NPPF) in July 2018. 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 planning policies should:

a) *"provide for the extraction of mineral resources of local and national importance, but should not identify new sites or extensions to existing sites for peat extraction;*

b) *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;*

c) *safeguard mineral resources by defining Mineral Safeguarding Areas; and adopt appropriate policies so that known locations of specific minerals resources of local and national importance are not sterilised by non-mineral development where this should be avoided (whilst not creating a presumption that the resources defined will be worked);*

d) *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;*

e) *safeguard existing, planned and potential sites for: the bulk transport, handling and processing of minerals; the manufacture of concrete and concrete products; and the handling, processing and distribution of substitute, recycled and secondary aggregate material;*

f) *set out criteria or requirements to ensure that permitted and proposed operations do not have unacceptable adverse impacts on the natural and historic environment or human health, taking into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality;*

g) *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*

h) *ensure that 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".*

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.

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.

Baseline Information

1.1 Schedule 2 of the SEA Regulations requires information to be provided on:

(2) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan.

(3) The environmental characteristics of areas likely to be significantly affected.

(4) 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 on the conservation of wild birds and the Habitats Directive.

1.2 The term 'baseline information' refers to the existing environmental, economic and social characteristics of the area likely to be affected by the Plan, and their likely evolution without implementation of the Plan. Baseline information provides the basis for predicting and monitoring the likely effects of a plan and helps to identify existing problems in the plan area.

1.3 The full baseline information is presented in **Appendix 3.** The SEA Regulations only requires 'environmental characteristics' to be identified, therefore to satisfy the requirements of SA, this has been extended to identify both social and economic baseline characteristics. Similarly, rather than only identifying 'existing environmental problems', to satisfy the requirements of SA, social and economic problems are also identified and are subsequently referred to as 'key sustainability issues' (see Error! Reference source not found.). In order to satisfy the requirements of Schedule 2, the following information is presented for each baseline topic:

- Quantified information on the current state and characteristics of the topic within Herefordshire;
- Comparators and trends; and,

- Key sustainability issues.

1.4 Baseline information presented in the SA of the HMWLP Issues and Options Report has been revised and updated to make use of recently available information sources, most notably the Mineral and Waste Need Assessments Updates completed by Hendeca in March 2018.

1.5 A brief overview of the minerals and waste context plus environmental, social and economic characteristics of Herefordshire is outlined in the following paragraphs.

Minerals and waste context

1.6 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. Coal was formerly worked at two locations – Wyre Forest Coalfield and Forest of Dean Coalfield. There are nine active quarries in Herefordshire. There may be a need for additional reserves of sand and gravel working, crushed rock and building stone during the lifetime of the Minerals and Waste Local Plan to continue to meet demand. There are currently no industrial processes in Herefordshire which are known to produce secondary aggregates[7]. Recycled aggregates are currently being produced within Herefordshire, principally at the CD&E waste recovery facility at Former Lugg Bridge Quarry.

1.7 The amount and type of waste produced, and the ways in which it is managed, partly reflects the environmental, social and economic characteristics of the area. Concentrated populations and commercial/industrial activities, as are found in Hereford and the main county towns are the largest producers of waste, and this is generally reflected in the pattern of waste management facilities within Herefordshire. Anaerobic digestion and biological treatment facilities are dispersed around the county, reflecting its agricultural sector. According to the WNA Update 2018[8], permitted facilities located in Herefordshire managed 416,000 tonnes of waste in 2016, compared to nearly 407,500 in 2015. The single largest tonnage is municipal waste (principally wastes from households); representing 47% of the wastes managed at permitted facilities in Herefordshire. The second largest tonnage is formed by agriculture and processing wastes (22%) fairly closely followed by construction and demolition wastes (19%). All the other wastes added together still only comprise about 11% of all wastes managed at the permitted facilities in Herefordshire. The majority (85%) of waste received at permitted facilities in Herefordshire originated in Herefordshire. There are 39 waste management facilities operating in Herefordshire.

Environmental characteristics

1.8 Herefordshire is a largely rural county and as such has a rich biodiversity offering. There are four sites of international importance for nature conservation within Herefordshire, which are designated pursuant to Directive 92/43/EEC[9]: the River Wye Special Area of Conservation (SAC); the Wye Valley Woodlands SAC; the Downton Gorge SAC; and, the River Clun SAC. There are three National Nature Reserves, seven Local Nature Reserves, 77 Sites of Special Scientific Interest, and 685 Local Wildlife Sites.

1.9 There are two designated AQMAs in Herefordshire – the Hereford AQMA and the Bargates Leominster AQMA.

1.10 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. 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.

1.11 Herefordshire possesses a rich historic environment which is reflected in the number of designated heritage assets – the Hereford Area of Archaeological Importance; 64 Conservation Areas, two are listed on the Heritage at Risk Register; 5,897 Listed Buildings in Herefordshire, 33

[7] Hendeca, 2018. Minerals Need Assessment Update 2018
[8] Hendeca, 2018. Waste Need Assessment Update 2018
[9] European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora

of which are on the Heritage at Risk Register; 265 Scheduled Monuments, 30 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.

1.12 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. The Shropshire Hills AONB lies almost adjacent to the north-western part of Herefordshire, near Leintwardine.

1.13 The majority of Herefordshire consists of grade 2 and grade 3 agricultural land.

Social characteristics

1.14 The latest population estimate for Herefordshire, the predicted mid-2016 population estimate was 189,500, of which 93,900 were male and 95,600 were female[10]. Almost a third of the county's resident's (60,800) live in Hereford city with one-fifth of the population living in the three largest market towns – including Ross (11,200 people) Leominster (12,000) and Ledbury (10,000). Just over half of the residents (99,900) live in areas classified as rural, with around two in five (79,800) living in the most rural 'village and dispersed'[11]. The population projections for Herefordshire predict that the population will increase to 209,000 by 2039[12]. Herefordshire is predicted to experience a demographic change with an increasing elderly population.

1.15 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. Housing in Herefordshire is less affordable than the England average, with a median house price to median earnings ratio of 8.91:1, compared to 7.25:1 across England[13]. Herefordshire has the worst housing affordability ratio in the West Midlands[14].

1.16 Overall levels of deprivation are low in the county however, according to the English Indices of Deprivation 2015[15], Herefordshire contains one Lower-layer Super Output Area (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).

1.17 Life expectancies for both men and women are higher than the national average, at 83.6 years for women and 80.1 years for men[16]. Health inequalities exist, as the average life expectancy for men in the least deprived areas is 3.9 years more than those in the most deprived areas. Women in the least deprived areas can expect to live 2.6 years longer than those in the most deprived areas[17].

1.18 There are over 100 publicly funded primary, secondary and special schools in Herefordshire. In 2020, it is hoped that a new university will open in Hereford: the New Model in Technology and Engineering (NMiTE).

1.19 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. 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.

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[10] ONS (2018) Mid-2016 population estimates (by single year of age and sex) for Herefordshire Council.

[11] Herefordshire Council (2018) Facts and Figures about Herefordshire [online]. Available at: https://factsandfigures.herefordshire.gov.uk/about-a-topic/population-and-demographics/population-around-the-county.aspx

[12] ONS (2016) Subnational Population Projections for Local Authorities in England – 2014-based projections.

[13] DCLG (2016) Tables 576 to 578: ratio of house price to earnings (by lower quartile and median by local authority, from 1997)

[14] Herefordshire Council (2015) Herefordshire Local Plan Core Strategy

[15] The English Indices of Deprivation (2015), DCLG

[16] *Ibid*

[17] Herefordshire Council (2018) Facts and Figures about Herefordshire, available at: https://factsandfigures.herefordshire.gov.uk/media/60400/jsna-2018-summary-report-v12.pdf, accessed 27/07/18

Economic characteristics

1.20 The latest labour market statistics[18] from January 2017 to December 2017 show that 94,500 people in Herefordshire were employed, accounting for 78.7% of the population, which is above the national average of 78%. The three main occupations in Herefordshire in the same period were professional occupations (16.6%), skilled trades and occupations (14.9%), and elementary occupations (12%). The county's largest employment industries are wholesale and retail trade (repair of motor vehicles and motorcycles) (19.2%), and human health and social work activities (16.4%). The proportion of people who are unemployed is 3.1% of the population which is the lower than the regional average (5.2%) and the national average (4.4%).

1.21 In 2015, 6.86 million people visited Herefordshire, 2.65m overnight visitors and 4.21m day visitors who between them contributed £442.81 m to the local economy. This supports about 6,688 full time equivalent jobs in the tourism industry. The main retail and cultural centre of Herefordshire is Hereford city, although market towns also play a key role.

1.22 The primary road network in Herefordshire generally radiates out from Hereford and Leominster. 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[19]. As part of the Hereford Transport Package, the City Link Road was opened in December 2017 in Hereford which links Commercial Road and Edgar Street. 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.

Key sustainability issues and likely evolution without the plan

A set of key sustainability issues for Herefordshire were identified and presented in the SA of the HMWLP Issues and Options Report. It is also a requirement of the SEA Regulations that consideration is given to the likely evolution of the environment if the HMWLP is not implemented. This analysis is presented in **Table 4** in relation to each of the key sustainability issues.

Table 4 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 may be a need for additional reserves of sand and gravel working, crushed rock and building stone during the lifetime of the Minerals and Waste Local Plan to continue to meet demand. However, there is a wide range of future demand for new reserves, reflecting the extent of uncertainties in minerals data. Recycled aggregates could have an increasingly important role to play in reducing reliance on imports of aggregates and supporting the delivery of the Circular Economy, particularly sand and gravel. The exploration, appraisal or extraction of hydrocarbons within the county is not reasonably expected to take place in the short to medium term and unlikely within the plan period.	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, 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	
Over the last four years there has been a notable increase in the capacity and	In the absence of the HMWLP, which will allocate appropriate sites for sustainable waste management, it is likely that the current

[18] Nomis (2018) Labour Market Profile – Herefordshire. Available at: https://www.nomisweb.co.uk/reports/lmp/la/1946157169/report.aspx

[19] Herefordshire Council (2016) Herefordshire Council Transport Plan 2016 - 2031

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
waste inputs to permitted facilities in Herefordshire. 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. As a result, there is a reliance on such facilities outside the county to process the proportion 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. This has different impacts on the various waste streams identified in Herefordshire: There is the risk of potential pressure on the current contracted capacity of the materials recovery facility at Norton to process additional LACW waste, particularly towards the end of the Plan period. Additional commercial and industrial (C&I) waste management capacity may be required, although this could be provided within a single facility or through a small number of facilities operating on an industrial estate. Assuming a 90% recovery target for non-hazardous Construction & Demolition (C&D) wastes, strategic locations for the future management of non-hazardous construction and demolition (CD&E) waste will need to be considered. Based on the low level of generation, there would not appear to be a strategic need for agricultural wastes, low level radioactive waste and new hazardous waste management capacity within Herefordshire. There are no insurmountable constraints identified in the period up to 2031 in relation to waste water.	waste management facilities will reach full capacity, particularly in relation to LACW. 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). The 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. However, climate change also presents a number of opportunities - milder winters should reduce the costs of heating homes and other buildings, helping to alleviate fuel poverty and reducing the	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.

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
number of winter deaths from cold. In addition, UK agriculture and forestry may be able to increase production with warmer weather and longer growing seasons.	
Biodiversity and geodiversity	
Herefordshire contains many areas of high ecological value including sites of international and national importance which are under pressure from farming, forestry and new development. Key environmental problems/threats identified in relation to European Sites likely to be affected by the HMWLP include habitat fragmentation, the spread of invasive species and diseases, pressure from public access, poor site and game management, structural deterioration of roost sites, decreasing quality of water, siltation, physical modification, nitrogen deposition, inappropriate scrub control and undergrazing. 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.
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 will 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.

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
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. There are 33 Listed Buildings, 30 Scheduled Monuments, one Registered Park and Garden and two Conservation Areas on the Heritage at Risk Register.	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. A higher than average number of households are considered to be fuel poor in the county.	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 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 population of Herefordshire performs generally better than the averages for nationally against the majority of health indicators. However, childhood obesity prevalence in Herefordshire is in line with the regional and national averages, and alcohol specific hospital stays and smoking levels for under 18s is worse than the average for England.	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	
Herefordshire has a range of cultural and leisure opportunities, and many visitors to Herefordshire come for its countryside.	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

Key sustainability issue	Likely evolution of the issue without implementation of the Herefordshire Minerals and Waste Local Plan
Improve provision and access to recreational resources (be that to linear routes, open space, or recreational facilities).	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	
78.7% of the population of Herefordshire are employed which is just above the national average. Unemployment remains below regional and national averages. Gross weekly earnings remain lower than the regional and national averages. Reliance on traditional employment sectors and service, whereas Herefordshire has aspirations to attract business in technology and knowledge intensive sectors. Retaining skilled members of the population is an issue for the local economy, and there is a need to improve training levels to enhance the quality of the local workforce.	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	
There is high reliance on private cars and traffic congestion in Hereford, putting additional strain on existing infrastructure. Severance and poor air quality resulting from queueing traffic has adverse impacts on journey times, and journey time reliability.	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.

Sustainability Appraisal Findings of the Site Options

This section presents the SA findings for the appraisal of the 23 reasonable alternative mineral site options and four potential Areas of Search, followed by the SA findings for the 17 reasonable alternative waste site options, which were assessed against the SA Framework and assumptions presented in **Appendix 5** of the full SA Report.

Desk-based site assessments were undertaken for these reasonable alternatives which were appraised as 'policy-off', i.e. each site has been appraised on its own merits without consideration to the potential mitigation and enhancement measures that might be available through policies in the Plan. The detailed SA matrices for the mineral site options are presented in **Appendix 6** of the full SA Report, and the detailed matrices for the waste site options are presented in **Appendix 7** of the full SA Report.

Table 5 presents an overview of the SA scores for the 23 reasonable alternative mineral site options and four potential Areas of Search. The mineral site options are likely to have mostly positive effects on the economic objectives (SA objectives **1: Employment**; **2: Sustainable Economy**; and, **4: Poverty and Equality**). Significant positive effects are identified for all mineral sites in relation to SA objective **11: Restoration**. Significant negative effects are identified for the majority of social and environmental SA objectives, with the most significant effects likely to be experienced in relation to SA objective **3: Health**, **5: Sustainable Transport**, **10: Climate Change**; **12: Biodiversity & Geodiversity**, **16: Pollution** and **17: Soil**.

Table 6 presents and overview of the SA scores for the 17 reasonable alternative waste sites. The waste site options are likely to have mostly positive effects with some significant positive effects identified for SA objectives **1: Employment**, **2: Sustainable Economy** and **4: Poverty & Equality**. Significant positive effects are also identified for SA objectives **8: Waste Hierarchy**, **11: Restoration** and **17: Soil**. Significant negative effects are identified for SA objectives **3:**

Health, **7: Built Environment**, **12: Biodiversity & Geodiversity**, **14: Water**, **16: Pollution** and **17: Soil**.

Chapter 4 of the SA Report describes the findings of the likely effects of the site options in more detail. The effects are presented by SA objective.

Of the 23 reasonable alternative mineral site options assessed, 20 are proposed for inclusion in the Draft HMWLP along with the four Areas of Search and 17 waste site options. **Appendix 4** presents an audit trail of the site options that have been assessed as reasonable alternatives and explains the Council's reasons for selecting or rejecting each one for inclusion in the Draft HMWLP. **Table 7** presents an overview of the SA scores for the proposed site allocations in the Draft HMWLP.

Table 5 Summary of SA scores for the reasonable alternative mineral site options and Areas of Search

SA Objective	1: Employment	2: Sustainable Economy	3: Health	4: Poverty and Equality	5: Sustainable Transport	6: Historic Environment	7: Built Environment	8: Waste Hierarchy	9: Mineral Resources	10: Climate Change	11: Restoration	12: Biodiversity & Geodiversity	13: Landscape	14: Water	15: Flooding	16. Pollution	17: Soil
M03a	+	+	0	+?	+/--	-?	0	-	+	+/--	++?	-?	0	0	0	0	--?
M03b	+	+	0	+?	+/--	-?	0	-	+	+/--	++?	-?	0	0	0	0	--?
M03c	+	+	0	+?	+/-	-?	0	-	+	+/-	++?	-?	0	0	0	0	--?
M03d	+	+	0	+?	+/--	-?	0	-	+	+/--	++?	-?	0	0	0	0	--?
M04	+	+	0	+?	+/--	-?	0	-	+	+/--	++?/-?	-?	0	-?	0	0	--?
M05a	+	+	--?	+?	+?/--?	-?	--?	-	+	+?/--?	++?	--?	0	-?	0	--?	-?
M05b	+	+	--?	+?	+?/-	-?	--?	-	+	+?/-	++?	-?	0	-?	0	--?	-?
M05c	+	+	--?	+?	+?/--	-?	--?	-	+	+?/--	++?	--?	0	-?	0	--?	--?
M05d	+	+	--?	+?	+?/--	-?	0	-	+	+?/--	++?	--?	0	--?	0	0	--?
M05e	+	+	--?	+?	+/-	-?	0	-	+	+/-	++?	-?	0	-?	0	0	--?
M05f	+	+	--?	+?	+/-	-?	--?	-	+	+/-	++?	-?	0	-?	0	0	--?
M05g	+	+	--?	+?	+/--	-?	--?	-	+	+/--	++?	--?	0	--?	0	0	--?
M07a	+	+	--?	+?	--?	-?	--?	-?	+	--?	++?	-?	0	0	0	0	-?
M07b	+	+	--?	+?	--	-?	0	-?	+	--	++?	-?	0	0	0	0	-?
M10a	+	+	-?	+?	+/--?	-?	0	-?	+	+/--?	++?	+?/--?	0	0	0	0	0
M10b	+	+	--?	+?	+/--	-?	0	-?	+	+/--	++?	+?/--?	0	0	0	0	0
M12	+	+	0	+?	--?	-?	0	-?	+	--?	++?	-?	0	0	0	0	-?
M13	+?	+	0	+?	--?	-?	0	-?	+	--?	++?	--?	0	-?	0	0	0
M16	+?	+	0	+?	+/--?	-?	0	-?	+	+/--?	++?	-?	0	-?	0	0	0
M17	+	+	0	+?	--?	-?	0	-?	+	--?	++?	-?	0	0	0	0	0
M18	+	+	0	+?	--?	-?	0	-?	+	--?	++?	-?	0	0	0	0	0
M20	+?	+	-?	+?	+/--?	-?	0	-?	+	+/--?	++?	--?	0	--?	0	0	-?
M22	+	+	-?	+?	--	--?	0	-?	+	--	++?/-?	-?	--?	-?	0	0	-?
Area of Search A	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?	--?	-?	-?	--?	--?	--?
Area of Search B	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?/-?	--?	-?	-?	--?	--?	--?
Area of Search C	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?	--?	--?	--?	--?	--?	--?
Area of Search D	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?/-?	--?	--?	-?	0	--?	-?

Table 6 Summary of SA scores for the reasonable alternative waste site options

SA Objective	1: Employment	2: Sustainable Economy	3: Health	4: Poverty and Equality	5: Sustainable Transport	6: Historic Environment	7: Built Environment	8: Waste Hierarchy	9: Mineral Resources	10: Climate Change	11: Restoration	12: Biodiversity & Geodiversity	13: Landscape	14: Water	15: Flooding	16. Pollution	17: Soil
W05	+	+	-?	+?	+/-?	0	--?	++?	0	+/-?	+?	--?	-?	--?	0	--?	-?
W07	+	+	--?	+?	+/-?	0	--?	++?	0	+/-?	+?	0?	0	-?	0	--?	0
W10	+	+	0	+?	+/-?	0	--?	++?	0	+/-?	+?	-?	-?	0	0	--?	--?
W13	+	+	0	+?	+/-?	0	0	++?	+	+/-?	+?	--?	0	--?	0	0	-?
W19	+	+	0	+?	+/-	0?	--?	++?/-?	0	+/-	+?	-?	-?	-?	0	0	-?
W43	+	+	0	+?	+/-	0	0	-	+	+/-	++?	+?	+?	0	+	0	++?
W44	+	+	0	+?	+/-	0	0	-	+	+/-	++?/-?	+?/-?	+?	-?	+	0	++?
W45	+	+	+?/-?	+?	+/-	+?	+?	-	+	+/-	++?	+?/--?	+?	--?	+	-?	+?
W58 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W59 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W60 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W61 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W62 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W63 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W64 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W65 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W66 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?

Table 7 Summary of SA scores for the Draft HMWLP proposed site allocations

SA Objective	1: Employment	2: Sustainable Economy	3: Health	4: Poverty and Equality	5: Sustainable Transport	6: Historic Environment	7: Built Environment	8: Waste Hierarchy	9: Mineral Resources	10: Climate Change	11: Restoration	12: Biodiversity & Geodiversity	13: Landscape	14: Water	15: Flooding	16. Pollution	17: Soil
M03a	+	+	0	+?	+/--	-?	0	-	+	+/--	++?	-?	0	0	0	0	--?
M03b	+	+	0	+?	+/--	-?	0	-	+	+/--	++?	-?	0	0	0	0	--?
M03d	+	+	0	+?	+/--	-?	0	-	+	+/--	++?	-?	0	0	0	0	--?
M04	+	+	0	+?	+/--	-?	0	-	+	+/--	++?/-?	-?	0	-?	0	0	--?
M05a	+	+	--?	+?	+?/--?	-?	--?	-	+	+?/--?	++?	--?	0	-?	0	--?	-?
M05b	+	+	--?	+?	+?/-	-?	--?	-	+	+?/-	++?	-?	0	-?	0	--?	-?
M05c	+	+	--?	+?	+?/--	-?	--?	-	+	+?/--	++?	--?	0	-?	0	--?	--?
M05d	+	+	--?	+?	+?/--	-?	0	-	+	+?/--	++?	--?	0	--?	0	0	--?
M05e	+	+	--?	+?	+/-	-?	0	-	+	+/-	++?	-?	0	-?	0	0	--?
M05g	+	+	--?	+?	+/--	-?	--?	-	+	+/--	++?	--?	0	--?	0	0	--?
M07a	+	+	--?	+?	--?	-?	--?	-?	+	--?	++?	-?	0	0	0	0	-?
M07b	+	+	--?	+?	--	-?	0	-?	+	--	++?	-?	0	0	0	0	-?
M10a	+	+	-?	+?	+/--?	-?	0	-?	+	+/--?	++?	+?/--?	0	0	0	0	0
M10b	+	+	--?	+?	+/--	-?	0	-?	+	+/--	++?	+?/--?	0	0	0	0	0
M12	+	+	0	+?	--?	-?	0	-?	+	--?	++?	-?	0	0	0	0	-?
M13	+?	+	0	+?	--?	-?	0	-?	+	--?	++?	--?	0	-?	0	0	0
M16	+?	+	0	+?	+/--?	-?	0	-?	+	+/--?	++?	-?	0	-?	0	0	0
M17	+	+	0	+?	--?	-?	0	-?	+	--?	++?	-?	0	0	0	0	0
M18	+	+	0	+?	--?	-?	0	-?	+	--?	++?	-?	0	0	0	0	0
M20	+?	+	-?	+?	+/--?	-?	0	-?	+	+/--?	++?	--?	0	--?	0	0	-?
Area of Search A	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?	--?	-?	-?	--?	--?	--?
Area of Search B	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?/-?	--?	-?	-?	--?	--?	--?
Area of Search C	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?	--?	--?	--?	--?	--?	--?
Area of Search D	+?	+	--?	+?	+?/--?	--?	--?	-?	+	+?/--?	++?/-?	--?	--?	-?	0	--?	-?
W05	+	+	-?	+?	+/-?	0	--?	++?	0	+/-?	+?	--?	-?	--?	0	--?	-?
W07	+	+	--?	+?	+/-?	0	--?	++?	0	+/-?	+?	0?	0	-?	0	--?	0
W10	+	+	0	+?	+/-?	0	--?	++?	0	+/-?	+?	-?	-?	0	0	--?	--?
W13	+	+	0	+?	+/-?	0	0	++?	+	+/-?	+?	--?	0	--?	0	0	-?
W19	+	+	0	+?	+/-	0?	--?	++?/-?	0	+/-	+?	-?	-?	-?	0	0	-?
W43	+	+	0	+?	+/-	0	0	-	+	+/-	++?	+?	+?	0	+	0	++?
W44	+	+	0	+?	+/-	0	0	-	+	+/-	++?/-?	+?/-?	+?	-?	+	0	++?
W45	+	+	+?/-?	+?	+/-	+?	+?	-	+	+/-	++?	+?/--?	+?	--?	+	-?	+?
W58 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W59 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W60 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W61 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W62 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W63 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W64 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W65 SES	+?	+?	0?	+?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?
W66 SES	++?	++?	0?	++?	+?	0?	0?	+?	0?	+?	+?	0?	0?	0?	0?	0?	0?

Sustainability Appraisal Findings of the Draft Herefordshire Minerals and Waste Local Plan Policies

This section describes the SA findings of the Vision, the 12 strategic objectives and the 18 policies proposed in the Draft Herefordshire Minerals and Waste Local Plan (contained in chapters 7-9 inclusive).

The Draft HMWLP also contains Core Strategy policies that are directly relevant to minerals and waste development (sustainable development policy - SS1; movement and transportation policies – SS4 and MT1; environmental quality and local distinctiveness policies – SS6, LD1, LD2, LD3 and LD4; climate change policy – SS7; open space policies OS1 and OS3; sustainable design and energy efficiency policy - SD1; renewable and low carbon energy generation policy - SD2; and, sustainable water management and water resources policy - SD3). These policies have previously been subject to SA in 2015 and were found 'sound' at the Examination. Therefore, the Core Strategy policies are not reassessed in the SA Report.

The SA matrices prepared for the policies are presented in **Appendix 8** of the full SA Report. Where policies have a spatial element i.e. they refer to specific mineral or waste sites, these have been appraised with reference to GIS data and the findings of the relevant site appraisals in **Appendices 6** and **7**, where appropriate (relates to policies M3, M4, M5, W5 and W6).

Table 8 presents an overview of the SA scores for the Draft HMWLP policies. Positive effects, including significant positive effects, are identified for SA objectives **1: Employment**, **2: Sustainable Economy**, **4: Poverty & Equality**, **8: Waste Hierarchy**, **9: Mineral Resources** and **11: Restoration**. Significant negative effects are likely for SA objectives **5: Sustainable Transport** and **10: Climate Change** for the mineral policies which have a site specific element (policies *M2: Sand & Gravel*; *M3: Crushed Rock*; and *M4: Sandstone*). Policy *M7: Unconventional Hydrocarbons* is expected to experience significant negative effects in relation to SA objective **10: Climate Change**.

Chapter 5 of the SA Report describes the findings of the likely effects of the Draft HMWLP policies in more detail. The effects are presented by SA objective.

Table 8 Summary of SA scores for the Draft HMWLP policies

SA Objective	1: Employment	2: Sustainable Economy	3: Health	4: Poverty and Equality	5: Sustainable Transport	6: Historic Environment	7: Built Environment	8: Waste Hierarchy	9: Mineral Resources	10: Climate Change	11: Restoration	12: Biodiversity & Geodiversity	13: Landscape	14: Water	15: Flooding	16. Pollution	17: Soil
Vision	+	+	+	+	+/-	+	+	++	++	+	+	+	+	+	+	+	+
SO 1: Health	0	0	++	0	+?	+	+	0	0	+?	+	+	+	+?	+?	+?	+
SO 2: Efficent Use of Minerals	+	+	+	+	+	+	+	+	++	+	0	+	+	+	+	+	+
SO 3: Safeguarding	+	+	+?/-?	+	+/-	+/-?	+/-?	0	++	+/-	0	+	+/-?	-?	+/-?	-?	+?/-?
SO 4: Waste Hierarchy	+	+	+	+	+	+	+	++	++	+	0	+	+	+	0	+	+
SO 5: Economy	+	++	+/-?	+	+/-?	+/-?	+/-?	++	+/-	+/-?	+?	+?/-?	+/-?	+/-?	+/-?	+/-?	+?/-?
SO 6: Supply of Minerals	+	++	+?/-?	+	+/-?	+?/-?	+?/-?	0	+	+/-?	+?	+?/-?	+?/-?	-?	+?/-?	+/-?	+?/-?
SO 7: Waste Management	+	++	+?/-?	+	+/-?	+?	+?	++	+	+/-?	0	+?/-?	+?/-?	+?/-?	+?/-?	+/-?	+?/-?
SO 8: Sustainable Transport	0	+	+?	0	++	+?	+?	0	0	+	0	+?	+?	0	0	+	0
SO 9: Suitable Locations	+	+	+?/-?	+	+?/-?	+/-?	+/-?	+	-	+?/-?	0	+/-?	+/-?	+/-?	+/-?	+?/-?	+/-?
SO 10: Design	0	0	+	0	0	+	+	0	0	0	+?	+	+	+	+	0	+
SO 11: Climate Change	0	0	+	0	+?	+	+	+	+	++	+?	+	+	+	+	++	+
SO 12: Environment	0	0	+	0	0	++	++	0	0	0	+?	++	++	++	++	0	++
SS8 : Resource Management	+	+	+	+	+	+	+	++	++	++	0	+	+	+	0	+	+
OS4: Access to open space and recreation from minerals and waste development	0	0	++	0	+	+	+	0	0	0	++	+	++	0	+	+	+
MT2: Transport within sites	0	0	+	0	++	+	+	0	0	+	+	+	+	+	+	+	+?
SD5: Site Reclamation	0	0	+?	0	+?	+	+	0	0	0	++	+	+	+	+	0	++?
M1: Mineral Strategy	+	+	+/-?	+	+/-?	+/-?	+/-?	+/-	++/-	+/-?	0	+/-?	+/-?	+/-?	+/-?	+/-?	+/-?
M2: Safeguarding Minerals	+	+	-?	+	-?	-?	-?	0	++?	-?	0	-?	-?	-?	-?	-?	-?
M3: Sand & Gravel	+	++	+?/-?	+	+?/--?	+?/-?	+?/-?	+?	++	+?/--?	++?	+?/-?	+?/-?	+?/-?	0	-?	+?/-?
M4: Crushed Rock	+	++	+?/-?	+	+?/--?	+?/-?	+?/-?	+?	++	+?/--?	++?	+?/-?	+?/-?	+?/-?	0	-?	+?/-?
M5: Sandstone	+	++?	+?/-?	+?/-?	+?/--?	+?/-?	+?/-?	+?	++	+?/--?	++?	+?/-?	+?/-?	+?/-?	0	-?	+?/-?
M6: Borrow Pits	+	+	+?	+	+?	+?/-?	+?/-?	+	++	+?/-?	++	+?/-?	+?/-?	+?/-?	+?/-?	+?	-?
M7: Unconventional Hydrocarbons	+?	+?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+	-?	--?	+?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?	+?/-?
W1: Waste Strategy	+	+	+?	+	+	+?	+?	++	++	+	+?	+?	+?	+	+?	+?	+
W2: Solid Waste	+	+	+?/-?	+	+?/-?	+?	+?	++	++	+?/-?	+?	+?	+?	0	+?	+?/-?	+
W3: Agricultural Waste	0	0	+	0	+	0	0	+	0	+	0	+	+	+	0	+	+
W4: Waste water	+	+	+	+	0	0	0	+	0	+	0	+	0	++	0	+	0
W5: Preferred Locations Solid Waste	+	+	-?	+	+/-?	-?	+?/-?	++?	-?	+?/-?	+?	-?	-?	-?	-?	-?	-?
W6: Preferred Locations Construction, Demolition and Excavation	+	+	-?	+	+/-?	-?	+?/-?	++?	-?	+?/-?	++?	-?	-?	-?	-?	-?	-?
W7: Waste Management Operations	+	+?	+?	+	+	+?	+?	++?	+	+	+	+?	+?	+	+?	+	+?

Sustainability Appraisal Findings of the Draft Herefordshire Minerals and Waste Local Plan

This section considers the potential total sustainability effects of the Draft Herefordshire Minerals and Waste Local Plan (2018). By looking at **Table 7** and **Table 8**, which summarises all of the sustainability effects for the HMWLP Vision; 12 strategic objectives; seven mineral-related policies; seven waste-related policies; 28 mineral and waste site allocations; four Areas of Search; and, nine strategic employment areas, a judgement can be made regarding the potential effects of the Draft HMWLP on each SA objective.

In accordance with SEA Regulations, this section also presents an assessment of secondary, cumulative, synergistic, short, medium and long-term, permanent and temporary effects.

SA Objective 1 - Support, maintain or enhance the provision of employment opportunities in the minerals and waste sectors

Positive effects were identified for all site options in relation to SA objective **1: Employment** as their allocation could have a direct effect on maintaining or increasing employment levels during site preparation, operation and restoration of mineral or waste sites. Minor positive effects are identified for 37 out of 41 site options as the majority of site proposals are unlikely to create a significant amount of new employment opportunities through their operation individually or cumulatively in the local area. Uncertain significant positive effects are expected for strategic employment sites that are greater than 20ha in size (sites W58, W59, W63 and W66) as they are appropriate locations for larger scale/strategic waste management facilities which could generate numerous employment opportunities in Herefordshire.

The Vision, seven strategic objectives, and 15 mineral and waste policies will also have minor positive effects for this SA objective as they support the generation of employment opportunities in the mineral and waste industries in Herefordshire. No significant positive effects were identified for any of the policies with regard to this SA objective.

No negative effects (minor or significant) were identified during the appraisal of sites and policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **minor positive effect** on supporting, maintaining or enhancing the provision of employment opportunities in the minerals and waste sectors.

SA Objective 2 - Maintain or enhance conditions that enable a sustainable economy and continued investment

Minor positive effects are also expected for SA objective **2: Employment** for 37 sites as the development of waste treatment facilities will maintain/enhance conditions that enable a circular economy and long-term investment in the waste sector while the allocation of mineral sites for extraction will ensure a steady and adequate supply of minerals to meet the needs of society and will encourage long-term investment in Herefordshire's minerals sector. As for SA objective 1, uncertain significant positive effects are identified for sites W58, W59, W63 and W66 as these sites, due to their size (>20ha), may significantly enhance investment in the waste industry if large scale/strategic waste management facilities were developed at these locations.

The majority of policies are expected to have minor positive effects on supporting a sustainable economy and continued investment in the minerals and waste industries. However, strategic objectives 5 (Economy), 6 (Supply of Minerals) and 7 (Waste Management) will have significant positive effects as they 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 industries. Further significant positive effects are expected for policies *M3: Sand and Gravel*, *M4: Crushed Rock* and *M5: Sandstone* as these policies seek to ensure a supply of various minerals throughout the plan period which will significantly support economic growth in the minerals sector.

No negative effects (minor or significant) were identified during the appraisal of sites and policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **minor positive effect** on maintaining or enhancing conditions that enable a sustainable economy and continued investment.

SA Objective 3 - Protect and improve the health of the people of Herefordshire, reduce disparities in health geographically and demographically

Of the 20 proposed minerals sites in the Draft HMWLP, nine sites are expected to have uncertain significant negative effects in relation to SA objective **3: Health** as they are within 100m of one or more sensitive receptors. Most often, these receptors are nearby residential areas in settlements. Uncertain significant negative effects are also identified for the four Areas of Search as they contain numerous sensitive receptors. Site W07 is expected to have an uncertain significant negative effect in relation to this SA objective as it is within 100m of the settlement of Leominster and a waste water treatment works facility which could have a cumulative adverse effect on the amenity of the community. The effect is uncertain as this has potentially been addressed through conditions relating to the existing planning permission for the site. No significant positive effects were identified during the appraisal of the sites. The majority of the remaining sites including the strategic employment areas are expected to have negligible effects.

Strategic objective 1 (Health) will have a significant positive effect on this SA objective as it directly supports minerals and waste development that make an appropriate contribution to improving health, well-being and quality of life of residents. Significant positive effects are also identified for policy *OS4: Access to open space and recreation from minerals and waste development* as it supports minerals and waste developments that optimise opportunities to improve public access to open spaces integrating green infrastructure as appropriate, which will benefit the health and amenity of local communities. The majority of policies are expected to have minor positive effects as they 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 management of waste in accordance with the waste hierarchy 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, built, heritage and cultural assets which may improve health, wellbeing and quality of life. However, minor negative effects are expected in relation to five strategic objectives, six minerals policies and three waste policies (generally as part of mixed effects). These policies generally support mineral and waste developments which could have adverse effects on the amenity of local residents and communities depending on their proximity to extraction and waste sites, due to impacts such as greenhouse gas emissions, noise, vibration and light pollution during site preparation, operation and restoration. No significant negative effects were identified during the appraisal of policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (minor positive/minor negative)** on protecting and improving the health of the people of Herefordshire, reducing disparities in health geographically and demographically.

SA Objective 4 - Reduce poverty and social inclusion by closing the gap between the most deprived areas in the county and the rest of the county

Encouraging investment in the minerals and waste industries has the potential to have a secondary impact on rates of deprivation through economic growth and job creation. All site options and the majority of policies are expected to have minor positive effects in relation to SA objective **4: Poverty and Equality**. Sites W58, W59, W63 and W66 are expected to have uncertain significant positive effects as they would provide employment opportunities at larger scale/strategic waste management facilities thereby reducing employment deprivation. Furthermore, site W63 would provide employment opportunities in one of the most deprived areas of Herefordshire. No significant positive effects were identified for any of the policies with regard to this SA objective. No significant negative effects were identified during the appraisal of sites and policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **minor positive effect** on reducing poverty and social inclusion by closing the gap between the most deprived areas in the county and the rest of the county

SA Objective 5 - Reduce road traffic, congestion and pollution, and promote sustainable modes of transport and efficient movement patterns in the county

Of the 20 proposed minerals sites in the Draft HMWLP, six sites are expected to have significant negative effects in respect to SA objective **5: Sustainable Transport** (M07a, M07b, M12, M13, M17 and M18) while 12 sites are expected to have significant negative effects as part of overall mixed effects as these sites are either large (over 20ha) and are expected to generate high volumes of heavy goods vehicle traffic; are not within 250m of a main road thereby encouraging the use of local roads which may result in vehicles travelling slowly increasing the potential for traffic and pollutant deposition along those routes; or, are not within 800m of any sustainable transport links which will encourage private car use among employees. The minor positive scores identified for 12 sites recognises the proximity to one or two sustainable transport links which will encourage employees of the mineral sites to use sustainable transport; or the sites are within 1km of the Moreton-on-Lugg railhead which may be used to transport minerals using a more sustainable mode of transport than road-based travel. It is recognised that within all Areas of Search, there are areas which could be within 800m of numerous sustainable transport links thereby enabling sustainable travel by employees of minerals sites, leading to minor positive effects, however, there are also areas which could be more than 250m from a main road or more than 800m from a sustainable transport link, resulting in significant negative effects. Mixed effects (minor positive/minor negative) are identified for all waste site options. Uncertain minor positive effects are identified for all of the strategic employment sites (sites W58-W66) as these may provide opportunities for symbiotic relationships between waste management, engineering, manufacturing and research industries which will help to reduce transport distances of waste.

A significant positive effect is identified for strategic objective 8 (Sustainable Transport) for this SA objective 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. A significant positive effect is expected for policy *MT2: Transport within sites* as it encourages the use of electric vehicles to transport minerals or waste within sites and requires development proposals to design internal transport routes to provide cycle links or footpaths upon reclamation of the site (and earlier where practicable). Minor positive effects are expected for 11 policies and for 14 policies as part of mixed effects as they:

- support the development of waste management facilities for reuse, recycling, recovery and the overall transition to a more circular economy, which has benefits for reducing traffic associated with new raw material extraction;
- encourage symbiotic relationships between waste management, engineering, manufacturing and research industries which will help to reduce the transport distances of waste;
- promote the long-term conservation of primary minerals, and the efficient use of minerals in new development including using recycled and secondary aggregates which will reduce road haulage activities if the recovered materials are sourced locally, thereby reducing road congestion in the county; and,
- support safeguarding of transport infrastructure such as railheads which can facilitate the sustainable transport of minerals.

Significant negative effects (as part of mixed effects) are identified for policies *M3: Sand & Gravel*, *M4: Crushed Rock* and *M5: Sandstone* while minor negative effects are identified (mostly as part of mixed effects) for 12 policies. The negative effects generally relate to minerals and waste continuing to be predominately transported by heavy goods vehicles which will result in increases in traffic generation and transport-related emissions.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (significant negative / minor positive)** on reducing road traffic, congestion and pollution, and promoting sustainable modes of transport and efficient movement patterns in the county.

SA Objective 6 - Value, protect and enhance the county's historic environment and cultural heritage

Uncertain significant negative effects are identified for the Areas of Search in relation to SA objective **6: Historic Environment** as these areas contain designated heritage assets that could

be adversely affected by mineral extraction if development were to take place at sites either containing or adjacent to these assets or at sites that contribute to the setting of heritage assets. Uncertain minor negative effects are identified for all the mineral sites as adverse effects on buried archaeology in limestone, sandstone or sand and gravel deposits may be possible but are unlikely. No significant positive effects were identified during the appraisal of sites. Negligible effects are identified for the majority of waste sites and strategic employment areas.

Mostly minor positive or mixed effects (minor positive/minor negative) are identified for the policies, with the exception of strategic objective 12 (Environment) which will have a significant positive effect as it supports the protection, conservation and enhancement of historic assets. No significant negative effects were identified during the appraisal of policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (minor positive/minor negative)** on valuing, protecting and enhancing the county's historic environment and cultural heritage.

SA Objective 7 - Value, protect and enhance the character and built quality of settlements and neighbourhoods

Uncertain significant negative effects are expected with regard to SA objective **7: Built Environment** for six mineral sites (M05a, M05b, M05c, M05f, M05g, and M07a) and four waste sites (W05, W07, W10 and W19) as they are within close proximity (100m) of a settlement, and, as such, may have an adverse effect on the character of the area. Uncertain significant negative effects have also been identified in relation to all Areas of Search (A, B, C, and D), as each of these contains multiple settlements. It is uncertain where mineral extraction proposals will come forward, however, should they be within 100m of settlements, there is the potential for adverse effects on the character of the area. An uncertain minor positive effect is expected for site W45, as the restoration of the former quarry through the disposal of inert waste, could positively contribute to the character of nearby settlements Wellington and Moreton on Lugg. Negligible effects have been identified in relation to the 18 remaining sites and the nine strategic employment sites. No significant positive effects were identified during the appraisal of sites.

Strategic objective 12 (Environment) is expected to have a significant positive effect on this SA objective as it seeks to conserve and promote the built environment by safeguarding the county's current stock of valued heritage and significant environmental assets from loss and damage, reversing negative trends, ensuring best condition and site betterment, as well as appropriately managing future assets. Minor positive or mixed effects (minor positive/minor negative) are identified for the majority of the policies. The positive effects primarily relate to promoting a circular economy which will reduce the need for extraction of raw minerals from sites within the county, which otherwise may adversely affect the character of settlements and neighbourhoods; the restoration of sites to open space and the incorporation of green infrastructure at developments which will contribute to the character of settlements; and, the use of building stone extracted from mineral sites in the county which will conserve and restore the built environment, thereby helping to maintain heritage assets (e.g. Listed Buildings) and a distinctive sense of place. Some uncertain minor negative effects (as part of mixed effects) are identified as mineral resources need to be worked where they occur which could have an adverse impact on the character of settlements. Similarly, there may be potential adverse impacts on the character of settlements from the development of new waste management facilities at industrial or strategic employment sites.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (minor positive/minor negative)** on valuing, protecting and enhancing the character and built quality of settlements and neighbourhoods.

SA Objective 8 - Move treatment of waste up the waste hierarchy

Uncertain significant positive effects are identified for waste site options W05, W07 and W10 in relation to SA objective **8: Waste Hierarchy** as they are operational household waste recycling centres which process waste that would otherwise be landfilled. Site W13 is operational and recovers construction, demolition and excavation waste which, if expanded, would have a significant positive effect on the recovery of waste. Mixed effects (uncertain significant positive/uncertain minor negative) are expected for W19 as the site may provide energy recovery

facilities, either biological (such as anaerobic digestion) which would have a significant positive effect or combustion with energy recovery (such as incineration or gasification) which would have a minor negative effect on driving waste up the waste hierarchy.

Minor negative effects have been identified for the mineral site options and waste sites W43, W44 and W45 as these are either identified in the Draft HMWLP as appropriate locations for the disposal of inert waste following extraction or have the potential to dispose of inert or landfill waste, which is judged to have negative effects in terms of moving the treatment of waste up the waste hierarchy. Uncertain minor positive effects may be experienced for strategic employment sites (sites W58-W66) as there may be opportunities for symbiotic relationships between waste management, engineering, manufacturing and research industries which would encourage reuse and recycling of waste and contribute to the circular economy.

Significant positive effects are identified for the Vision, strategic objectives 4 (Waste Hierarchy), 5 (Economy) and 7 (Waste Management) as they promote the management of waste in accordance with the circular economy and the adequate provision of waste management infrastructure in Herefordshire.

A significant positive effect is identified for policy *SS8: Resource Management* as it promotes a circular economy which improves resource efficiency and the reuse of waste. Significant positive effects are expected for policies *W1: Waste Strategy*, *W2: Solid Waste*, and *W7: Waste Management Operations* as these policies promote a circular economy, the recovery of materials from construction and demolition waste and the development of waste management facilities for reuse, recycling, recovery and also site reclamation. Significant positive effects are also identified for policies *W5: Preferred Locations Solid Waste* and *W6: Preferred Locations Construction, Demolition and Excavation* as they support the operation and development of waste facilities that could promote improved waste management processes and move waste management up the waste hierarchy. The remaining policies are generally expected to have minor positive effects on this SA objective. No significant negative effects were identified during the appraisal of policies or sites.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (significant positive/minor negative)** on moving treatment of waste up the waste hierarchy.

SA Objective 9 - Promote sustainable use of mineral resources

Minor positive effects are expected for all mineral site options and Areas of Search assessed with regard to SA objective **9: Mineral Resources** as the allocation of sites would provide a degree of protection to mineral resources from inappropriate non-mineral development, and would contribute to the supply of aggregates to meet the needs of society. Minor positive effects are also identified for sites W13, W43, W44 and W45 as these sites are either former quarries (W13) or involve inert waste disposal to restore quarries (W43, W44 and W45) which means that mineral resources at these sites would already have been extracted and could not be sterilised. Negligible effects are identified for sites W05, W07, W10 and W19 and for the strategic employment areas.

The most significant positive effects are identified during the policy appraisals for this SA objective. Twelve significant positive effects are identified for the Vision and strategic objectives 2 (Efficient Use of Minerals), 3 (Safeguarding) and 4 (Waste Hierarchy) as they seek to safeguard mineral resources and promote resource efficiency which directly support the SA objective. A significant positive effect is identified for policy *SS8: Resource Management* as it promotes a circular economy which improves resource efficiency.

The majority of minerals policies are expected to have significant positive effects for this SA objective as policy *M1: Mineral Strategy* requires minerals to be worked sustainably; policies *M2: Safeguarding Minerals*, *M3: Sand & Gravel*, *M4: Crushed Rock* and *M5: Sandstone* provide protection to mineral resources from inappropriate non-mineral development; and policy *M6: Borrow Pits* promotes the efficient use of mineral resources by supporting the infill of borrow pits with unusable materials from civil engineering construction projects. These effects are uncertain for policy *M2: Safeguarding Minerals* as the policy states that minerals located on land which is needed for strategic development may be lost where the need for non-minerals development is greater that the need for the mineral resource. Additionally, the positive effect identified for policy *M1: Mineral Strategy* is also mixed with a minor negative effect as the policy promotes the

working of new mineral sites. A significant positive effect is expected for policy *W1: Waste Strategy* as it supports the use of inert waste in the restoration of mineral workings, which could have a positive effect on managing and using waste mineral by-products. Additionally, significant positive effects are expected for policies *W1: Waste Strategy* and *W2: Solid Waste* as these policies promote the increased reuse of mineral resources, creating a market for recycled and secondary aggregate use.

The majority of remaining policies are expected to have either minor negative or negligible effects on this SA objective.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **significant positive effect** on promoting the sustainable use of mineral resources.

SA Objective 10 - Reduce Herefordshire's vulnerability to the impacts of climate change as well as its contribution to the problem

Of the 20 proposed minerals sites in the Draft HMWLP, six sites are expected to have significant negative effects in respect to SA objective **10: Climate Change** (M07a, M07b, M12, M13, M17 and M18) while 12 sites are expected to have significant negative effects as part of overall mixed effects. These sites are either large (over 20ha) and are expected to generate high volumes of heavy goods vehicle traffic resulting in the production of high levels of CO_2 or other greenhouse gas emissions; are not within 250m of a main road thereby encouraging the use of local roads which may result in vehicles travelling slowly increasing the potential for traffic and pollutant deposition along those routes; or, are not within 800m of any sustainable transport links which will encourage private car use among employees and increased transport emissions. The minor positive scores identified for 12 sites recognises the proximity to one or two sustainable transport links which will encourage employees of the mineral sites to use sustainable transport thereby reducing transport emissions; or the sites are within 1km of the Moreton-on-Lugg railhead which may be used to transport minerals using a more sustainable mode of transport than road-based travel. It is recognised that within all Areas of Search, there are areas which could be within 800m of numerous sustainable transport links thereby enabling sustainable travel by employees of minerals sites, leading to minor positive effects, however, there are also areas which could be more than 250m from a main road or more than 800m from a sustainable transport link, resulting in significant negative effects. Mixed effects (minor positive/minor negative) are identified for all waste site options. Uncertain minor positive effects are identified for all of the strategic employment sites (sites W58-W66) as these may provide opportunities for symbiotic relationships between waste management, engineering, manufacturing and research industries which will help to reduce transport distances of waste and associated emissions.

A significant positive effect is identified for strategic objective 11 (Climate Change) for this SA objective as it seeks to address the causes and impacts of climate change relating to minerals and waste development activity thereby reducing air pollution from greenhouse gas emissions. Policy *SS8: Resource Management* will also have a significant positive effect as it directs minerals and waste resources to contribute positively to addressing climate change through promoting a circular economy and managing waste in accordance with the Waste Hierarchy will reduce energy use and greenhouse gas emissions associated with its transportation.

Minor positive effects are expected for 11 policies and for nine policies as part of mixed effects as they:

- support the development of waste management facilities for reuse, recycling, recovery and the overall transition to a more circular economy, which will reduce energy use and greenhouse gas emissions associated with the transportation of waste;
- encourage symbiotic relationships between waste management, engineering, manufacturing and research industries which will help to reduce the transport distances of waste;
- promote the long-term conservation of primary minerals, and the efficient use of minerals in new development including using recycled and secondary aggregates which will reduce the frequency of the transportation of raw materials to market, thereby reducing transport emissions;
- support safeguarding of transport infrastructure such as railheads which can facilitate the sustainable transport of minerals;

- support open space and green infrastructure provision which could also attenuate flooding thereby providing resilience to climate change;
- support the recovery of energy which enables the resultant heat and power to be used, thereby reducing emissions from fossil fuel electricity generation; and,
- restrict the extraction and use of coal for energy whereby the benefits will outweigh the impacts, including greenhouse gas emissions.

An uncertain significant negative effect is expected for policy *M7: Unconventional Hydrocarbons* as it supports unconventional hydrocarbons which are a non-renewable indigenous fuel. Unconventional hydrocarbon development has the potential to exacerbate the impacts of climate change through increased greenhouse gas emissions primarily from the processing (direct release of produced gas to the atmosphere from controlled venting or uncontrolled fugitive emissions/leakages) and use of unconventional hydrocarbons. Depending on the location of the development, indirect greenhouse gas emissions may also arise as a consequence of development on high carbon soils.

Significant negative effects (as part of mixed effects) are identified for policies *M3: Sand & Gravel*, *M4: Crushed Rock* and *M5: Sandstone* while minor negative effects are identified (mostly as part of mixed effects) for nine policies. The negative effects generally relate to minerals and waste continuing to be predominately transported by heavy goods vehicles which will result in increases in transport-related emissions or from the release of carbon due to mineral extraction activities as soils and geological formations can store carbon in fairly inert forms.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (significant negative / minor positive)** on reducing Herefordshire's vulnerability to the impacts of climate change as well as its contribution to the problem.

SA Objective 11 - Promote effective restoration and appropriate after use of sites

Significant positive effects are expected for the majority of mineral site options and waste sites options W43, W44 and W45 with regard to SA objective **11: Restoration**, as the NPPF (2018) states that mineral sites should be restored at the earliest convenience, taking account of aviation safety, to a high environmental standard and that restoration should result in land of equal value being returned following the working of a site. These effects are uncertain dependent on the type of restoration proposed and eventually developed on sites, which will not be known until the planning application stage. The positive effects identified for sites M04, W44, Area of Search B and Area of Search D are combined with an uncertain minor negative effect as these sites are located within either the Shobdon Aerodrome Safeguarding Zone or Gloucestershire Safeguarding Zone and therefore have potential for adverse impacts on aircraft safety from bird-strike. The remaining waste sites and the strategic employment areas are expected to have uncertain minor positive effects on this SA objective as there may be potential for restoration of these sites when the waste facilities cease to operate. No significant negative effects were identified during the appraisal of sites.

Significant positive effects are expected for policies *OS4: Access to open space and recreation from minerals and waste development* and *SD5: Site Reclamation* as they support the restoration of sites to a beneficial after-use and to a high standard which incorporate open spaces and green infrastructure. Significant positive effects are also expected for mineral policies *M3: Sand & Gravel*, *M4: Crushed Rock* and *M5: Sandstone*, as the sites proposed for allocation in these policies will be restored to a high environmental standard, and for policy *M6: Borrow Pits* as it directly supports the effective restoration and appropriate after-use of borrow pits. Significant positive effects are expected for policy *W6: Preferred Locations Construction, Demolition and Excavation* as it supports restoration through the sustainable disposal of inert wastes at three of the operational quarries in Herefordshire. The majority of remaining policies will have minor positive effects on this SA objective. No negative effects (significant or minor) were identified during the appraisal of policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **significant positive effect** on promoting effective restoration and appropriate after use of sites.

SA Objective 12 - Value, maintain, restore and expand county biodiversity and geodiversity

Sites M05a, M05d, M05g, M20, W05 and W13 have all been identified as having uncertain significant negative effects with regard to SA objective **12: Biodiversity & Geodiversity** as they are located within 250m of either the River Wye SAC and/or the River Lugg SSSI. An uncertain significant negative effect (as part of a mixed effect) is also identified for site W45 at Wellington Quarry as it is adjacent to the River Wye SAC and the River Lugg SSSI. The SA assessment also identifies uncertain significant negative effects for site M13 as it is within 250m of the Black Mountains SSSI. Mixed effects (uncertain minor positive/uncertain significant negative) are identified for sites M10a and M10b as they either contain (as is the case for M10a) or are adjacent (as is the case for M10b) to the Perton Roadside Section Quarry SSSI. The negative effects are identified as these sites have the potential to affect biodiversity and geodiversity through habitat/geology damage/loss, fragmentation, and disturbance to species from noise, light, vibration and human presence. The uncertain minor positive effects are expected as extraction at M10a and M10b may expose more geological features at the SSSI making them visible and available for learning opportunities. Due to the extent of the Areas of Search, they all contain internationally, nationally or locally designated conservation sites and are therefore expected to have uncertain significant negative effects on this SA objective. The remaining sites are generally either expected to have uncertain minor negative or negligible effects on this SA objective.

The HRA Screening Report (LUC, 2018) also identifies for sites M05a, M05d, M05g, M12, M20, W45 and Area of Search C potential for significant effects on the River Wye SAC and potential for significant effects on the Wye Valley and Forest Dean Bat Sites SAC (for site M12 only) as a result of physical loss or damage/non-physical disturbance/water quality/non-toxic contamination which cannot be excluded at this stage, and will therefore require further consideration at the Appropriate Assessment stage to determine whether, in light of potential mitigation safeguards, they will result in adverse effects on the integrity of the SACs, either alone or in-combination with other plans and projects.

The only significant positive effect identified in the policy appraisal is for strategic objective 12 (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, reversing negative trends, as well as appropriately managing future assets. Minor positive effects are expected for the majority of policies as they support site restoration, beneficial after uses, the incorporation of green infrastructure, and the avoidance of adverse environmental impacts. However, some minor negative effects are also identified as the extraction of minerals and the development of waste facilities could have adverse impacts through habitat/geology damage/loss, fragmentation, and disturbance to species.

Furthermore, the HRA Screening Report identified a lack of certainty as to whether the following policies would result in likely significant effects on European sites:

- *M3: The winning and working of sand and gravel* (physical damage and loss of habitat, non-physical disturbance and non-toxic contamination).
- *W6: Preferred locations for construction, demolition and excavation waste facilities* (physical damage and loss of habitat, non-physical disturbance and non-toxic contamination).

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a mixed effect **(significant negative/minor positive)** on valuing, maintaining, restoring and expanding county biodiversity and geodiversity.

SA Objective 13 - Value, protect, enhance and restore the landscape quality of Herefordshire, including its rural areas and open spaces

Uncertain significant negative effects are identified for Areas of Search C and D in relation to SA objective **13: Landscape** as they either contain part of the Wye Valley AONB, areas of open space, or areas identified as being of high sensitivity according to The Urban Fringe Sensitivity Analysis. The acceptability of any minerals extraction from these areas would need to be assessed against the minerals and other relevant policies of the HMWLP. Uncertain minor negative effects are identified for sites W05, W10 and W19 as these sites are located within Green Infrastructure Corridors and/or Enhancement Zones. Uncertain minor positive effects are expected for sites

W43, W44 and W45 as the disposal of inert waste will restore the quality of the landscape at the former mineral sites. The remaining sites including the strategic employment sites are expected to have negligible effects.

Strategic objective 12 (Environment) is expected to have a significant positive effect on this SA objective as it seeks to conserve and promote the natural environment, which is assumed to include the landscape, by safeguarding the county's current stock of environmental assets from loss and damage, reversing negative trends, ensuring best condition and site betterment, as well as appropriately managing future assets. A significant positive effect is also expected for policy *OS4: Access to open space and recreation from minerals and waste development* as it supports the protection and enhancement of green infrastructure and open space as part of mineral and waste developments. The majority of policies are expected to have minor positive effects in relation to this SA objective as they support the restoration of former quarries thereby restoring landscape character and quality; promote the delivery of well-designed minerals and waste developments that reinforce local distinctiveness and are supported by green infrastructure, which will minimise the landscape and visual intrusion of waste and mineral facilities; and, encourage the efficient use of mineral reserves and the transitioning to a more circular economy which will reduce the rate of extraction of natural resources, and any associated impacts on the landscape. Some uncertain minor negative effects are expected and generally relate to potential impacts on landscape character and quality from mining and quarrying as these sites need to be worked where the resource lies which may be within a protected or sensitive landscape. No significant negative effects were identified during the appraisal of policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (minor positive/minor negative)** on valuing, protecting, enhancing and restoring the landscape quality of Herefordshire, including its rural areas and open spaces.

SA Objective 14 - Value, protect and enhance the quality of watercourses and maximise the efficient use of water

Sites M05d, M05g and W45 are expected to have uncertain significant negative effects with regard to SA objective **14: Water** as they are within 250m of the River Lugg which is designated as a SSSI waterbody. Further uncertain significant negative effects are identified for site M20 as it is within 250m of the River Wye SSSI waterbody. The HRA Screening Report (LUC, 2018) identifies that sites M05a, M05d, M05g and W45 are located at Wellington Quarry, adjacent to the River Wye SAC and share direct hydrological connectivity with the River Wye SAC, either through sharing boundaries or via field drains. However, as these allocations relate to the extraction of sand and gravel and the disposal of inert waste (W45 only) which is non-reactive both chemically and biologically, the potential for activities at these sites to result in changes in water quality which would be considered significant is low. Nevertheless, in the absence of appropriate safeguards and mitigation measures, the potential for these sites to harm the qualifying features of the SAC, cannot be excluded.

An uncertain significant negative effect is also identified for site M20 as it is located 300m upslope from the River Wye SAC/SSSI and the western edge of the site is situated immediately adjacent to a brook at Merbach which flows directly into the River Wye SAC/SSSI while the western edge of site M12 is situated immediately adjacent to Mally Brook which discharges into River Wye SAC approximately 3.7km downstream. As a result, run-off of chemicals, pollutants, sediment or contaminated water has the potential to result in likely significant effects on the SAC. However, as stated in the HRA Screening Report, it is likely that this could be avoided with relative ease through a commitment to, and implementation of, appropriate mitigation safeguards including best practice working methods.

Uncertain significant negative effects are identified for sites W05 and W13 as these are either within a Source Protection Zone and/or are within 250m of a waterbody classified as being in 'bad' ecological/chemical status. The effects are uncertain as they have potentially been considered and addressed through existing planning conditions relating to the operational sites.

Within Area of Search C there is a Source Protection Zone (SPZ1) which provides protection for the head works around abstraction boreholes. Moreton Brook, also within the Area of Search, has a 'bad' ecological status which could be potentially affected further should it have connectivity with a future minerals site. There is, therefore, potential for future sites to fall within or close to

these areas, leading to a significant negative effect. The HRA Screening Report also concludes that potential for likely significant effects associated with potential activities will depend on the location and nature of the proposals in Area of Search C and, in the absence of appropriate safeguards and mitigation measures, the potential for operations at in this area to harm the qualifying features of the SAC, cannot be excluded.

Uncertain minor negative effects are identified for seven mineral site options (M04, M05a, M05b, M05c, M05e, M13, and M16), three waste site options (W07, W19 and W44), and Areas of Search A, B and D as they are either within 250m of rivers which have 'poor' or 'moderate' ecological or chemical status, or are between 250m and 1km of a SSSI waterbody. Negligible effects are identified for the remaining 12 sites and the nine strategic employment sites. No significant positive effects were identified during the appraisal of sites.

A significant positive effect was identified for strategic objective 12 (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, reversing negative trends, ensuring best condition and site betterment, as well as appropriately managing future assets. Further significant positive effects were identified for policy *W4: Waste water* as this promotes waste water management, enabling the treatment and reuse of water. The majority of policies are expected to have minor positive effects in relation to this SA objective as they promote the circular economy that will increase efficient water use, promote the safe management of fertilisers and manures that could otherwise be released in to water environments, and support waste and mineral developments that avoid adverse impacts, such as upon watercourses. Some uncertain minor negative effects are expected and generally relate to potential impacts on water quality if waste and mineral sites have hydrological connectivity with designated or vulnerable waterbodies, or within Source Protection Zones, or require water resource use that may adversely affect water supply.

Furthermore, the HRA Screening Report identified a lack of certainty as to whether the following policies would result in likely significant effects on water quality of European sites:

- Policy *M3: The winning and working of sand and gravel*.
- Policy *M5*: *The winning and working of building stone (sandstone)*.
- Policy *M7*: *Unconventional hydrocarbons*.
- Policy *W6*: *Preferred locations for construction, demolition and excavation waste facilities*.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (significant negative/minor positive)** on valuing, protecting and enhancing the quality of watercourses and maximise the efficient use of water.

SA Objective 15 - Reduce the risk of flooding and the resulting detriment to public well-being, the economy and the environment

None of the 20 proposed mineral sites in the Draft HMWLP are within a Flood Zone 3 area and therefore negligible effects are identified for SA objective **15: Flooding**. There are Flood Zone 3 areas within Areas of Search A, B and C. The acceptability of any minerals extraction from these areas would need to be assessed against the minerals and other relevant policies of the HMWLP. Whilst at this stage uncertain significant negative effects are identified for Areas of Search A, B and C based on the constraints identified, effects are uncertain as the location of future minerals sites in these areas is not known. A negligible effect is identified for Area of Search D. Site W45 is partly within Flood Zone 3, however, minor positive effects are identified for this site and sites W43 and W44 for this SA objective as the restoration of sites through the disposal of inert waste will help to increase permeable land cover in the county which will contribute towards flood attenuation. Furthermore, the restoration of sites could create new wetland habitat that provides flood storage. Negligible effects are identified for the remaining sites. No significant positive effects were identified during the appraisal of sites.

The only significant positive effect is identified for strategic objective 12 (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, reversing negative trends, ensuring best condition and site betterment, as well as appropriately managing future assets. Minor positive

effects are generally recorded as restoring former mineral sites provides opportunities for water storage which can alleviate risks elsewhere and the protection/enhancement of green infrastructure can help to reduce adverse effects associated with flooding by providing increasing permeable land cover. Some uncertain minor negative effects (as part of mixed effects) are likely as mineral sources may naturally occur in areas of flooding, or new waste facilities at industrial or strategic employment sites may be located within a Flood Zone 3 area. No significant negative effects were identified during the appraisal of policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **minor positive effect** on reducing the risk of flooding and the resulting detriment to public well-being, the economy and the environment.

SA Objective 16 - Minimise noise, light, and air pollution

Sites M05a, M05b, M05c, W05, W07 and W10 are expected to result in uncertain significant negative effects in relation to SA objective **16: Pollution** as, whilst they are not within an AQMA, they are within 100m of settlements which could result in adverse effects on sensitive receptors. All four Areas of Search are considered to have potential to result in significant negative effects given that there are sensitive receptors including schools, settlements and churches within these areas. There is, therefore, potential for future sites to fall within or close to these areas, leading to a significant negative effect, however, given that the acceptability of any minerals extraction from these areas would need to be assessed against the minerals and other relevant policies of the HMWLP, and also that the location of sites within the Areas of Search are unknown at present, the effects are uncertain. The majority of the remaining sites will have a negligible effect on this SA objective. No significant positive effects were identified during the appraisal of sites.

Strategic objective 11 (Climate Change) will have a significant positive effect on this SA objective as it supports mineral and waste developments that help adapt to and mitigate the impacts of climate change which will reduce air pollution from greenhouse gas emissions. Generally the policies will have minor positive effects (20 policies, seven as part of mixed effects) as they seek to conserve primary minerals and promote the efficient use of mineral reserves which will reduce the rate of extraction of natural resources and any associated impacts such as dust, noise, light and air pollution, as well as reduced transport emissions; promote a circular economy and manage waste in accordance with the Waste Hierarchy which will reduce greenhouse gas emissions (for example from the transportation of waste and raw materials) thereby benefitting air quality; support the provision of open spaces integrating green infrastructure as part of mineral and waste sites, including trees and hedgerows, which will assist in improving local air quality and may act as buffers for noise pollution from the activities undertaken at sites; and, support waste management facilities for energy recovery which enable the resultant heat and power to be utilised, thereby reducing the need for fossil fuel usage and resultant emissions. Uncertain minor negative effects are also identified (usually as part of mixed effects) for 14 policies as these support the development of new waste facilities and the extraction of minerals which may result in some level of dust, noise, odour and air pollution. No significant negative effects were identified during the appraisal of policies.

Overall, the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (minor positive/minor negative)** on minimising noise, light, and air pollution.

SA Objective 17 - Value, protect and enhance soil quality and resources

Eight mineral sites proposed in the Draft HMWLP are expected to have uncertain significant negative effects in relation to SA objective **17: Soil** as development on mainly (>50%) high quality Best & Most Versatile Agricultural Land (Grade 1, 2 and 3a) or on large areas of greenfield (>20ha) will result in that land being lost to other uses (M03a, M03b, M03d, M04, M05c, M05d, M05e and M05g). Uncertain significant negative effects are also identified for Areas of Search A, B and C as these areas comprise Grade 2 and Grade 3 Best and Most Versatile Agricultural Land. An uncertain significant negative effect is identified for site W10 as this site comprises entirely Grade 2 agricultural land.

Uncertain significant positive effects are identified for sites W43 and W44 as these sites comprise mainly Grade 2 or 3a agricultural land. These sites are proposed as appropriate locations for the disposal of inert waste as part of the restoration of former mineral sites. Section 5 of The Town

and Country Planning Act 1990 (as amended) requires mineral planning authorities to ensure that restoration meets the required standard (normally to the same physical characteristics as before). Therefore, positive effects are identified as restoration may safeguard the long-term potential of Best and Most Versatile Agricultural Land and other soil resources, however, the effects are uncertain, and dependent on the type of restoration proposed and eventually developed on the sites, which will not be known until the planning application stage. The remaining sites are either expected to have minor negative or negligible effects on this SA objective.

A significant positive effect is expected for strategic objective 12 (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. Policy *SD5: Site Reclamation* is also expected to have an uncertain significant positive effect as site reclamation schemes have the potential to return sites to agricultural use, thereby safeguarding the long-term potential of Best and Most Versatile Agricultural Land and conserving soil resources. No significant negative effects were identified during the appraisal of policies. The remaining policies are generally expected to have minor positive effects or mixed effects (minor positive/minor negative) on this SA objective.

As the majority of significant negative effects are in relation to mineral sites which will be mitigated through policy *SD5: Site Reclamation*, overall the Draft Herefordshire Minerals and Waste Local Plan is therefore considered to have a **mixed effect (minor positive/minor negative)** on valuing, protecting and enhancing soil quality and resources.

Duration of Effects

Short-term effects of the Draft HMWLP

The impacts of the Draft HMWLP in the short-term are mostly related to the initial impacts of commencing minerals extraction and the development of waste facilities. These will include the removal of vegetation, soil, and provision of infrastructure required. Such works could have negative impacts on biodiversity, health and wellbeing, amenity of local communities (possible disruption to rights of way, traffic flows, noise generation, vibration, dust etc.), soil quality, and the landscape. However, these impacts are temporary in nature and some may be minimised through good design, adherence to the policies in the Draft HMWLP or reversed through restoration measures in the medium to long-term.

Medium-term effects of the Draft HMWLP

Medium-term positive impacts relate to the employment and economic benefits of the waste and minerals sites. Negative impacts in the medium-term include the implications of operational minerals extraction sites and waste management facilities on health and wellbeing, and the amenity of local communities (e.g. noise, dust, odour, increased traffic etc.), and on landscape quality. However, these impacts should be avoided or mitigated through good practices by the minerals and waste operators, and adherence to the policies in the Draft HMWLP when planning proposals are assessed and determined by Herefordshire Council.

Long-term effects of the Draft HMWLP

Long-term, permanent benefits that would result from the Draft HMWLP include the provision of sufficient mineral and waste developments to meet Herefordshire's needs, potential flood alleviation, habitat creation and biodiversity enhancement, recreation enhancement opportunities through the restoration of former mineral sites, or the incorporation and preservation of important geological features within mineral sites. Long-term, permanent negative impacts of the Draft HMWLP are potentially: loss of habitats, areas of Best & Most Versatile Agricultural Land; climate change implications of the energy required to operate facilities and vehicle movements to and from mineral and waste sites; and, the disturbance and/or removal of archaeological remains. However, there may also be some long-term, permanent positive impacts for biodiversity and landscape through the creation of new habitats, and enhancement of landscape through well designed and implemented restoration of former mineral sites; and long term, permanent positive impacts for the historic environment as sites may benefit our understanding of the local

archaeology which is found during minerals operations, and aggregates and building stone, for example, could also make a positive contribution towards local vernacular. Further long-term positive impacts may also include reduced consumption of resources and improvements, in terms of air quality and greenhouse gases, through co-locating waste facilities and reduced volumes of landfilled waste through recovery and recycling of waste.

Secondary, Cumulative and Synergistic Effects

Encouraging investment in the minerals and waste industries has the potential to have a secondary impact on rates of deprivation through economic growth and job creation. Furthermore, the restoration of former mineral sites (Upper Lyde Quarry, Shobdon Quarry, Wellington Quarry, Leinthall Quarry, Perton Quarry, Callow Delve, Black Hill Delve, Llandraw Delve, Pennsylvani Delve, Sunnybank Delve and Westonhill Wood Delve) as required by NPPF (2018) would have secondary positive impacts on investment in the county and consequently employment opportunities in Herefordshire.

There is potential for cumulative, long-term adverse effects on the amenity of local communities where mineral workings, which tend to be clustered as adjacent permissions to be worked sequentially, are located (e.g. Upper Lyde Quarry, Wellington Quarry, Leinthall Quarry or Perton Quarry). Furthermore, sites which are within close proximity of a sensitive receptor and another mineral or waste site could also have a cumulative adverse effect on the amenity of the community, for example, site W07 is within 100m of residential areas and a waste water treatment works facility. Indirectly there may also be positive impacts on human health, wellbeing and amenity resulting from the creation of high quality habitats and landscapes that contribute to a high quality of life for present and future generations where after-use schemes are publicly accessible. There could be potential for cumulative negative effects on local air quality when waste management facilities are combined with other facilities within existing industrial estates or strategic employment sites. There could also be potential negative cumulative effects from noise at mineral sites that are in close proximity, for example, the currently operational site at Wellington Quarry (M05) and the proposed site to be re-opened in 2018 at Upper Lyde Quarry (M03) are within 1.7km of each other. Effects may be particularly experienced at the settlement of Moreton on Lugg.

Minerals extraction and waste treatment requires the transport of minerals and materials which will commonly be road based. Where waste road transport passes through urban areas it is likely to have a cumulative adverse effect on exacerbating congestion and air quality problems, particularly where new waste facilities may be located at strategic employment sites W59, W60, W61, W62 and W63, as these are within close proximity to an AQMA. As the mineral sites are located in rural areas where traffic volumes are commonly low, the cumulative effects on the road network may be disproportionately large where sites are in close proximity due to the low capacity of rural roads. Furthermore, depending on the type of restoration proposed for sites, there may be secondary impacts from an increase in visitor numbers to an area which is likely to increase traffic volumes and transport emissions. Potential positive synergistic impacts may be experienced from the co-locating of waste facilities due to reduced waste transport distances and from the clustering of mineral sites as adjacent permissions to be worked sequentially which presents an opportunity to use the same equipment for processing of aggregate. The processes associated with the extraction of minerals and the treatment of waste may also have cumulative adverse effects on air quality and GHG emissions.

Policy *M7: Unconventional Hydrocarbons* would lead to the recovery of an energy mineral that may have otherwise remained unused which would have secondary benefits of diversifying the energy mix of the country and increasing energy security. Safeguarding minerals from inappropriate development through policies *M2: Safeguarding Minerals*, *M3: Sand & Gravel*, *M4: Crushed Rock* and *M5: Sandstone* would reduce the need to import minerals from outside the county, which would have positive secondary impacts on achieving self-sufficiency as well as on congestion and greenhouse gas emissions. Although there is little or no secondary aggregate production in Herefordshire, the use of recycled aggregates will also have positive secondary benefits as it reduces demand for the extraction of primary minerals. Similarly, the allocation of new waste management infrastructure and the promotion of the reuse, recovery and recycling of

waste through policies *W1: Waste Strategy*, *W2: Solid Waste*, *W5: Preferred Locations Solid Waste*, *W6: Preferred Locations Construction, Demolition and Excavation* and *W7: Waste Management Operations* will also have positive secondary impacts on achieving self-reliance, reducing the need to identify sites for landfill (either within or outside of the county), and reducing greenhouse gas emissions from the transport of waste further afield for processing. Policies *W1: Waste Strategy*, *W3: Agricultural waste management* and *W7: Waste management operations* support proposals for anaerobic digestion and incineration with energy recovery which results in landfill avoidance and enables the resultant heat and power to be used, thereby resulting in secondary positive effects on air quality through energy production that offsets/replaces consumption of fossil fuels but also secondary negative effects on air quality from the release of emissions from incineration.

Positive synergistic effects may be experienced in relation to the strategic employment sites as there may be opportunities for symbiotic relationships between waste management, engineering, manufacturing and research industries which will contribute to the circular economy at a materials level.

Secondary positive effects may be experienced in the built and historic environments as the Draft HMWLP provides a mechanism to ensure that there is a steady and adequate supply of natural stone for the conservation and restoration of buildings, including designated historic buildings, which will help to maintain heritage assets and a distinctive sense of place.

Secondary positive effects may be experienced at mineral sites as extraction may expose more geological features making them visible and available for learning opportunities. Positive secondary impacts may be experienced as the restoration of mineral sites offers the potential to deliver biodiversity gains in the long term, however, many sites are restored to wetland and grassland habitats which can attract large numbers of species that may in certain circumstances pose a hazard to aircraft. There may be negative secondary impacts from the development of mineral sites within an Aerodrome Safeguarding Zone (i.e. M04, W44, Area of Search B and Area of Search D) as there is potential for adverse impacts on aircraft safety from bird-strike. The positive and negative secondary impacts will depend on the type of restoration proposed and eventually developed on the sites. There is also potential negative cumulative impacts from quarries that are clustered at the same location as these may have adverse effects on biodiversity through habitat fragmentation or species disturbance. Conversely, there may be potential for positive cumulative impacts resulting from habitat restoration schemes at these sites which may collectively improve habitat connectivity. Finally, although policies *OS4: Access to open space and recreation from minerals and waste development* and *SD5: Site Reclamation* seek to enhance and restore the landscape, they can also benefit biodiversity and the water and soil environments, even though this is not the primary purpose of these policies.

Mineral extraction is proposed at several sites in the same localities, for example at Upper Lyde Quarry, Wellington Quarry, Leinthall Quarry and Perton Quarry. Phasing of sites should be considered to reduce cumulative adverse effects on the landscape, biodiversity and geodiversity, the water and soil environments, the historic environment, the road network, and the amenity of local communities. Works and restoration of existing sites should be completed prior to development starting on new sites to ensure no negative cumulative impacts are experienced.

There may be potential negative cumulative effects on flood risk and water resources through changing surface water drainage patterns and the loss of permeable surfaces to minerals extraction and waste developments, particularly where sites are located in proximity to each other. Following restoration, particularly at mineral sites clustered at the same location, there is potential for positive cumulative effects in relation to flood alleviation through the provision of additional flood storage.

The loss of agricultural land at site W10 and the potential temporary loss of Best & Most Agricultural Land at eight mineral sites, in addition to sites in three Areas of Search, would cumulatively add to the loss of agricultural land in the UK. However, the loss is considered to be small in relation to the overall agricultural land lost in the UK per annum to development.

Mitigation and recommendations

The following paragraphs identify the HMWLP and Local Plan-Core Strategy policies that are expected to provide mitigation for the potential significant negative effects identified for the site allocations and other HMWLP policies (in Chapters 4 and 5 of the full SA Report). Note that only those SA objectives for which potential significant negative effects were identified are addressed, therefore six of the SA objectives (SA objectives **1: Employment**, **2: Sustainable Economy**, **4: Poverty and Equality**, **8: Waste Hierarchy, 9: Mineral Resources** and **11: Restoration**,) are not included in the table as they are unlikely to be significantly negatively affected by the policies or site allocations in the Herefordshire Minerals and Waste Local Plan.

It is also noteworthy that some SA objectives, namely **6: Historic Environment**, **13: Landscape** and **15: Flooding**, are recording precautionary significant negative effects due to the constraints identified in the broad Areas of Search. These effects are uncertain as the location of future minerals sites in these areas is not known.

SA Objective 3 - Protect and improve the health of the people of Herefordshire, reduce disparities in health geographically and demographically

Policy *SD1: Sustainable design and energy efficiency* of the Core Strategy applies to minerals and waste developments and requires planning proposals to safeguard residential amenity for existing and proposed residents; and to ensure that new development does not contribute to, or suffer from, adverse impacts arising from noise, light or air contamination, land instability or cause ground water pollution. Core Strategy policy *SS6: Environmental quality and local distinctiveness* requires proposals to consider their impact on local amenity, including light pollution, air quality and tranquillity.

Policy *OS4: Access to open space and recreation from minerals and waste development* in the Draft HMWLP supports the provision of outdoor facilities, such as Public Rights of Way, and the incorporation of green infrastructure which will contribute to the amenity and health of local communities.

Chapter *7: Strategic Policy and General Principles* of the Draft HMWLP describes existing Core Strategy policies that are directly relevant to minerals and waste development, as well as proposing additional policies of a strategic nature applicable to minerals and waste development. For the description of Core Strategy policy *SS6: Environmental quality and local distinctiveness*, the Draft HMWLP provides an explanation of how mineral and waste developments should seek to mitigate impacts on local amenity, air quality and tranquillity. It is recommended that this text is included as an additional policy. The Draft HMWLP states that all applications will be expected to incorporate robust measures to ensure that proposed developments do not cause unacceptable adverse impacts on either the environment or local communities, many of which can be overcome by implementing standard measures such as:

- limiting working hours;
- locating plant, machinery and haulage routes away from sensitive receptors;
- advanced tree planting;
- phasing so the development moves away from sensitive receptors;
- acoustic screening measures;
- enclosing plant and machinery;
- plant being fitted with silencers and white noise alarms;
- sheeting of lorries;
- cleaning of lorry wheels before they exit the site;
- good maintenance of bunds and stockpiles;
- avoiding or minimising the use of blasting explosives; and,
- careful design of external lighting to confine its influence to the point of use.

Recommendations:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments do not cause unacceptable adverse impacts on either the environment or local communities.

The HMWLP should include a policy on cumulative impacts and phasing of workings to provide details that proposed mineral and waste sites much comply with to ensure that cumulative impacts on the amenity of local communities (from noise, dust, odour, vibration), air quality, landscape, biodiversity and geodiversity, the water and soil environments, the historic environment, and the road network, can be adequately mitigated to enable a proposal to be acceptable.

Through the implementation of the above policies and recommendations, there will be **no residual significant negative effect** in relation to SA objective **3: Health**.

SA Objective 5 - Reduce road traffic, congestion and pollution, and promote sustainable modes of transport and efficient movement patterns in the county

Core Strategy policy *SS4: Movement and transportation* requires new developments to be designed and located to minimise the impacts on the transport network; ensuring that journey times and the efficient and safe operation of the network are not detrimentally impacted. Furthermore, where practicable, development proposals should be accessible by and facilitate a genuine choice of modes of travel, including walking, cycling and public transport.

Policy *MT1: Traffic management, highway safety and promoting active travel* of the Core Strategy requires development proposals to demonstrate that the strategic and local highway network can absorb the traffic impacts of the development without adversely affecting the safe and efficient flow of traffic on the network or that traffic impacts can be managed to acceptable levels to reduce and mitigate any adverse impacts from the development. It also encourages active travel; the protection of existing local and long distance footways, cycleways and bridleways; and, well-designed, safe layouts. Where traffic management measures are introduced, they should be designed to respect the character of the surrounding area including its landscape character.

Chapter *7: Strategic Policy and General Principles* of the Draft HMWLP describes existing Core Strategy policies that are directly relevant to minerals and waste development, as well as proposing additional policies of a strategic nature applicable to minerals and waste development. For the description of the Core Strategy policies identified above, the Draft HMWLP states that development proposals should consider the whole life of the site at the application stage which will enable a sustainable transport strategy to be put in place at the earliest opportunity. It supports the incorporation of green infrastructure into developments to offset carbon emissions caused by minerals and waste related traffic and the incorporation of cycle links or footpaths upon reclamation of the site. It also states that it may not always be possible to gain access directly to the strategic highway network from a site, but the proposed route should avoid local roads and settlements where feasible. It is recommended that this text is included as an additional policy on transport. The policy should also state that, where necessary, routeing agreements and/or travel plans may be sought to control and alleviate the effects of traffic movements, for example in order to avoid environmentally sensitive places or local conditions of congestion on the highway network. The policy should also refer to the bulk movement of minerals by rail from Wellington Quarry which can help to reduce environmental impacts, fuel consumption, and adverse effects on the amenity of settlements along possible routes.

Recommendation:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments do not cause unacceptable adverse impacts on the transport network.

The recommendations outlined for SA objective 3: Health to include new policies on cumulative impacts and protecting the amenity of communities (e.g. by limiting working hours; requiring

wheel cleaning facilities and sheeting of lorries) should also limit cumulative impacts on the road network and potential damage to and contamination of public highways from mud and other deleterious materials. Through the implementation of the above policies and recommendations, in addition to the recommendations under SA objective 3, there will be **no residual significant negative effect** in relation to SA objective **5: Sustainable Transport**.

SA Objective 6 - Value, protect and enhance the county's historic environment and cultural heritage

Planning applications for mineral extraction in the Areas of Search will be assessed against Core Strategy policy *LD4: Historic Environment and heritage assets* which requires development proposals to protect, conserve, and where possible enhance heritage assets and their settings; to record and advance the understanding of the significance of any heritage assets to be lost; and, where appropriate to improve the understanding of and public access to the heritage asset.

Chapter *7: Strategic Policy and General Principles* of the Draft HMWLP describes existing Core Strategy policies that are directly relevant to minerals and waste development, as well as proposing additional policies of a strategic nature applicable to minerals and waste development. For the description of Core Strategy policy *LD4: Historic Environment and heritage assets*, the Draft HMWLP provides an explanation of how mineral and waste developments should seek to protect and enhance the historic environment. It is recommended that this text is included as an additional policy. The Draft HMWLP states that mineral and waste development proposals should include a clear strategy for enhancing the historic environment. Site reclamation and after-use may enable improved access to historic sites, enhance the setting of historic features (such as water meadows), reinstate historic features such as hedgerows, or provide on-site interpretation of the site and its history in association with publicly accessible areas. It also states that wet working of mineral sites may not be a viable option where there are potential archaeological assets as this can significantly restrict the delivery of appropriate mitigation measures.

Recommendation:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments do not cause unacceptable adverse impacts on the historic environment.

Through the implementation of the above policies and recommendations, there will be **no residual significant negative effect** in relation to SA objective **6: Historic Environment**.

SA Objective 7 - Value, protect and enhance the character and built quality of settlements and neighbourhoods

Core Strategy policy *SD1: Sustainable design and energy efficiency* requires new developments to be designed to maintain local distinctiveness and to respect the scale, height, proportions and massing of surrounding development, whilst making a positive contribution to the character of an area.

Through the implementation of the above policy, there will be **no residual significant negative effect** in relation to SA objective **7: Built Environment**.

SA Objective 10 - Reduce Herefordshire's vulnerability to the impacts of climate change as well as its contribution to the problem

Policy *SS8: Resource Management* directs minerals and waste resources to contribute positively to addressing climate change through promoting a circular economy and managing waste in accordance with the Waste Hierarchy will reduce energy use and greenhouse gas emissions associated with its transportation.

Core Strategy policy *SS7: Addressing climate change* requires development proposals to include measures which will mitigate their impact on climate change. At a strategic level, this will include designing developments to reduce carbon emissions and use resources more efficiently; focusing development to the most sustainable locations; promoting the use of decentralised and renewable or low carbon energy, where appropriate; and, protecting the best agricultural land, where

possible. For the description of policy SS7, the Draft HMWLP states that reduced energy and water usage can be achieved through different ways, including good site design to reduce transport movements and circulating water within operations to reduce overall demand. Buildings and plant should be designed to reduce resource requirements and consequent carbon emissions, for example through the use of ultra-low emission vehicles (including non-fossil fuels and electric vehicles) and renewable energy supply (including solar panels, open-loop ground source or surface water source heating and cooling systems). Site reclamation also provides opportunities to address climate change by enabling the movement of wildlife and flood storage to alleviate risks elsewhere. It is recommended that this text is included as an additional policy. This policy should also support the avoidance of carbon sinks (e.g. peats) in order to minimise loss of carbon sequestration.

Recommendation:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments prevent, mitigate or offset the effects of climate change.

The significant negative effect identified for policy *M7: Unconventional Hydrocarbons* could arise from the processing (direct release of produced gas to the atmosphere from controlled venting or uncontrolled fugitive emissions/leakages) and use of unconventional hydrocarbons. The policy currently protects designated landscape, historic and biodiversity/geodiversity sites; however, it should also support the protection of important soil types, particularly carbon sinks and Best & Most Versatile Agricultural Land. The policy should also state that developments should incorporate the use of best practice in construction and plant specification to minimise releases to air through fugitive emissions; phasing water demand to avoid periods of low flow or water stress; ensuring waste management plans include the transport and treatment of the flowback and produced water generated; and ensuring transport plans include measures to address the effects on local communities including vehicle frequency, scheduling, speed restrictions and routeing. The policy should also refer to carbon capture and storage (CCS) at the stage of production and use of unconventional hydrocarbons to reduce carbon emissions/increase sustainability.

Recommendation:

Policy *M7: Unconventional Hydrocarbons* should be updated to support the protection of important soil types, particularly carbon sinks and Best & Most Versatile Agricultural Land. The policy should also state that developments should incorporate the use of best practice in construction, operation and plant specification to minimise releases to air through fugitive emissions; phasing water demand to avoid periods of low flow or water stress; ensuring waste management plans include the transport and treatment of the flowback and produced water generated; and ensuring transport plans include measures to address the effects on local communities including vehicle frequency, scheduling, speed restrictions and routeing. The policy should also support carbon capture and storage to reduce carbon emissions/increase sustainability.

Furthermore, existing regulatory requirements, provided they are followed, will ensure that effects at the project level will be identified, assessed and mitigated to an acceptable level. These will include:

- gaining planning permission from Herefordshire Council which will include addressing the effects of siting, landtake, community disturbance, flood risk, contamination of land, and traffic. Effects on European designated conservation sites will be assessed as part of the Habitat Regulations Assessment process and will also be considered by Natural England;
- gaining permits, licences, consents and/or authorisations under environmental regulations implemented by the Environment Agency. These processes will, inter-alia, ensure that any new or incremental demand on water resources will remain within sustainable limits;
- implementing the health and safety legislation of the Health and Safety Executive, including assurance of well integrity; and

- implementing DECC controls on flaring, venting and mitigation of seismic risks.

Permits and consents will require operators to provide information on chemicals used, gas produced, emissions, discharges, and the results of any well integrity testing during exploration and operation. It is considered likely that, through the use of construction and operation best practice, environmental effects resulting from onshore exploration and production activities could be minimised and managed to acceptable levels.

The recommendation outlined for SA objective 3: Health to include a new policy on cumulative impacts should address the potential negative cumulative impacts on air quality while the recommendation outlined for SA objective 5: Sustainable Transport should address potential impacts arising from the transportation of minerals and waste. However, due to the nature of unconventional hydrocarbon development, there will be a **residual significant negative effect** in relation to SA objective **10: Climate Change**.

SA Objective 12 - Value, maintain, restore and expand county biodiversity and geodiversity

Policy *SD5: Site Reclamation* supports site reclamation schemes that take account of any development relevant to the area. While it is stated under the explanation of Core Strategy policy *SD1: Sustainable design and energy efficiency* that proposals for site working, restoration and after-use will be required to consider aviation safety in demonstrating the appropriateness of water management and site reclamation schemes, it is recommended that the policy text of SD5 is updated to include this statement.

Recommendation:

Policy *SD5: Site Reclamation* should be updated to require proposals for restoration to take account of aviation safety.

Policy *LD2: Biodiversity and geodiversity* of the Core Strategy requires development proposals to conserve, restore and enhance biodiversity and geodiversity assets, through the:

- retention and protection of nature conservation sites and habitats, and important species in accordance with their status as follows:
    - development that is likely to harm sites and species of European Importance will not be permitted;
    - development that would be liable to harm Sites of Special Scientific Interest or nationally protected species will only be permitted if the conservation status of their habitat or important physical features can be protected by conditions or other material considerations are sufficient to outweigh nature conservation considerations;
    - development that would be liable to harm the nature conservation value of a site or species of local nature conservation interest will only be permitted if the importance of the development outweighs the local value of the site, habitat or physical feature that supports important species;
    - development that will potentially reduce the coherence and effectiveness of the ecological network of sites will only be permitted where adequate compensatory measures are brought forward.
- restoration and enhancement of existing biodiversity and geodiversity features on site and connectivity to wider ecological networks; and,
- creation of new biodiversity features and wildlife habitats.

It also states that, where appropriate, the Council will work with developers to agree a management strategy to ensure the protection of, and prevention of adverse impacts on, biodiversity and geodiversity features.

For the description of Core Strategy policy *LD2: Biodiversity and geodiversity*, the Draft HMWLP states that the minerals and waste industries present significant opportunities to provide a net gain in biodiversity and to improve the coherence and resilience of habitats and ecological

networks, enabling wildlife to respond to a range of environmental pressures. Site reclamation will be expected to contribute at a landscape scale towards Biodiversity Action Plan targets, promoting the priorities of Herefordshire's Biodiversity Action Plans, taking account of the attributes of the site and of nearby areas, to support coherent and resilient networks of habitats that link the site with relevant ecological features in the wider landscape. Management strategies associated with a minerals or waste development may include a buffer within the development site to protect vulnerable features. Minerals and waste development proposals will also be expected to avoid unacceptable impacts on geodiversity value. Planning applications should demonstrate how the proposed development will deliver objectives of UK and Herefordshire Geodiversity Action Plans, such that geodiversity features are successfully incorporated with green infrastructure into reclamation and after-use, through measures such as:

- providing safe public access to geological features, whilst avoiding damage to them;
- involving geologists, geodiversity groups and museums in advising on, recording and sampling geodiversity;
- incorporating geodiversity considerations into site management plans to protect and maintain exposures;
- providing information to support understanding, interpretation and enjoyment of the features;
- creating links beyond the site boundary into the wider landscape.

It is recommended that the above text is included as part of an additional policy on biodiversity and geodiversity.

Recommendation:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments do not cause unacceptable adverse impacts on biodiversity and geodiversity.

In relation to the River Wye SAC, impacts associated with the effect of physical damage and loss were associated with site allocations M05a, M05d, M05g and W45 due to their location adjacent to the SAC and the presence of offsite functionally linked wetland habitat which may be utilised by otter. As recommended in the HRA, these potential effects could be mitigated through the provision of policy safeguards within the HMWLP which require site level assessment and a commitment to, and implementation of, best practice working measures in line with a site specific mitigation and avoidance plan. This type of avoidance and mitigation would also serve to prevent and mitigate potential effects associated with non-physical disturbance, non-toxic contamination and water quality as a result of sites M05a, M05d, M05g and W45, Area of Search C and policies M3 and W6, and potential water quality impacts associated with sites M12, M20 and policy M5.

Recommendation:

In relation to sites that are likely to have a significant effect on the River Wye SAC, the HMWLP should require site level assessment and a commitment to, and implementation of, best practice working measures in line with a site specific mitigation and avoidance plan.

The potential for likely significant effects on the Wye Valley and Forest of Dean Bat Sites SAC was identified as a result of physical damage and loss of offsite functionally linked woodland habitat present within site allocation M12. This is considered highly precautionary, and as recommended in the HRA, the risk of such an effect could be minimised through the provision of a commitment to site specific assessment where new areas of excavation and associated tree felling is proposed, and if required, the retention of a woodland periphery at the site to prevent habitat severance to horseshoe bat species.

Recommendation:

In relation to site M12, the HMWLP should require site specific assessment where new

areas of excavation and associated tree felling is proposed, and if required, the retention of a woodland periphery at the site to prevent habitat severance to horseshoe bat species.

An uncertain significant negative effect was identified in the SA for site W13 due to its proximity to the River Wye SAC and the River Lugg SSSI. However, the HRA Screening Report concluded that the site is unlikely to have a significant effect on the SAC. The SA identified uncertain significant effects for site W05 as it is within close proximity to the River Lugg SSSI and for site M13 as it is within close proximity to the Black Mountains SSSI. Mixed effects (uncertain minor positive/uncertain significant negative) are identified for sites M10a and M10b as they either contain (as is the case for M10a) or are adjacent (as is the case for M10b) to the Perton Roadside Section Quarry SSSI. These potential adverse effects on SSSIs can be mitigated through the implementation of policy *LD2: Biodiversity and Geodiversity* and the additional policy proposed for inclusion in the HMWLP.

The sites and policies identified in the HRA Screening Report as having likely significant effects will also be subject to Appropriate Assessment (alongside the Pre-Submission HMWLP), at which point formal consultation with Natural England as the statutory conservation authority will be completed. The recommendation outlined for SA objective 3: Health to include a new policy on cumulative impacts should also address the potential negative cumulative impacts on biodiversity and geodiversity. Through the implementation of the above policies and recommendations, in addition to the recommendation under SA objective 3, there will be **no residual significant negative effect** in relation to SA objective **12: Biodiversity & Geodiversity**.

SA Objective 13 - Value, protect, enhance and restore the landscape quality of Herefordshire, including its rural areas and open spaces

Planning applications for mineral extraction in the Areas of Search will be assessed against Core Strategy policy *LD1: Landscape and townscape* which requires development proposals to conserve and enhance the natural, historic and scenic beauty of important landscapes and features, including Areas of Outstanding Natural Beauty, nationally and locally designated parks and gardens, and conservation areas. The policy also requires proposals to demonstrate that character of the landscape has positively influenced the design and scale of the development. Proposals should also incorporate new landscape schemes to ensure development integrates appropriately into its surroundings. For the description of policy LD1, the Draft HMWLP outlines a number of mitigation measures that could minimise impacts on the landscape from mineral and waste developments including:

- protecting, enhancing or creating views;
- interpretation boards at publicly accessible areas to enable greater understanding of the landscape, historic landscape character and influence of the underlying geology;
- designing waterbodies to be of a type, shape and scale that fits with the local landscape character and optimises biodiversity gains;
- protecting or re-instating historic landscape features such as hedgerows or woodland; and,
- ensuring any planting is appropriate to the landscape character, using locally present species to optimise biodiversity gains.

It is recommended that this text is included as part of an additional policy on landscape.

For the description of Core Strategy policy *SD1: Sustainable design and energy efficiency*, the Draft HMWLP states that the Council will expect proposals to incorporate best practice measures to minimise the effects of visual intrusion and care should be taken to ensure that screening measures are appropriate and are not, in themselves, a source of visual intrusion. It is recommended that this text is included as part of an additional policy on landscape.

Other policies which planning applications will be assessed against include:

- Policy *LD3: Green Infrastructure* of the Core Strategy which requires development proposals to protect, manage and plan for the preservation of existing and delivery of new green infrastructure.

- Policy *SD5: Site Reclamation* which supports site reclamation schemes that deliver landscape scale benefits and/or integrated green infrastructure appropriate to its location.
- Policy *OS4: Access to open space and recreation from minerals and waste development* which supports the protection and enhancement of green infrastructure and open space as part of mineral and waste developments.

Recommendation:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments do not cause unacceptable adverse impacts on the landscape including from visual intrusion and should include mitigation measures such as screening.

The recommendation outlined for SA objective 3: Health to include a new policy on cumulative impacts should also address the potential negative cumulative impacts the landscape. Through the implementation of the above policies and recommendations, in addition to the recommendation under SA objective 3, there will be **no residual significant negative effect** in relation to SA objective **13: Landscape**.

SA Objective 14 - Value, protect and enhance the quality of watercourses and maximise the efficient use of water

The HRA recommendation in relation to the River Wye SAC outlined in SA objective **12: Biodiversity and Geodiversity** which states that the HMWLP should require site level assessment and a commitment to, and implementation of, best practice working measures in line with a site specific mitigation and avoidance plan for sites that are likely to have a significant effect on the SAC, serves to prevent and mitigate potential effects associated with water quality as well as physical loss of or damage to habitat, non-physical disturbance and non-toxic contamination for sites M05a, M05d, M05g, W45, Area of Search C and policies M3 and W6, and potential water quality impacts associated with sites M12, M20 and policy M5.

Policy *M7: Unconventional Hydrocarbons* broadly specifies the location of potential unconventional hydrocarbon resources in the south of the county, and associated activities may include hydraulic fracturing for gas. These activities have the potential to degrade the quality of ground water resources and whilst the policy specifies safeguards in relation to protecting European sites, the wording of policy M7 requires strengthening to recognise that significant impacts can occur from activities occurring outside of the European site boundaries, together with a commitment to undertake site specific HRA assessment for any such proposal as it comes forward for consideration. It is also recommended that a Water Management Plan and a Waste Management Plan are required which could include, due to the volume of water required for hydraulic fracturing, that demand should be met from recycling and reuse of flowback water (the fractured fluid injected into the shale rock during hydraulic fracturing which returns to the surface through the drilled well). The policy could also state that flowback water, once it is intended for disposal, is not permitted to be re-injected into the geological formation and will require treatment as a waste, to protect water quality. Furthermore, given the relatively high consumption of water during hydraulic fracturing, the timing of water consumption should be considered in light of local conditions so as to reduce the risk of abstractions occurring during low flow periods.

Recommendation:

The wording of policy M7 requires strengthening to recognise that significant impacts can occur from unconventional hydrocarbon activities occurring outside of the European site boundaries, together with a commitment to undertake site specific HRA assessment for any such proposal as it comes forward for consideration. It is also recommended that a Water Management Plan and a Waste Management Plan are required which could include, due to the volume of water required for hydraulic fracturing, that demand should be met from recycling and reuse of flowback water (the fractured fluid injected into the shale rock during hydraulic fracturing which returns to the surface through the drilled well). The policy could also state that flowback water, once it is intended for disposal, is not permitted to be re-injected into the geological formation and will require

treatment as a waste. Furthermore, given the relatively high consumption of water during hydraulic fracturing, the timing of water consumption should be considered in light of local conditions so as to reduce the risk of abstractions occurring during low flow periods.

Policy *SD3: Sustainable water management and water resources* of the Core Strategy requires development proposals to reduce flood risk; to avoid an adverse impact on water quality; to protect and enhance groundwater resources; and, to provide opportunities to enhance biodiversity, health and recreation.

Chapter *7: Strategic Policy and General Principles* of the Draft HMWLP describes existing Core Strategy policies that are directly relevant to minerals and waste development, as well as proposing additional policies of a strategic nature applicable to minerals and waste development. For the description of Core Strategy policy *SD3: Sustainable water management and water resources*, the Draft HMWLP states that proposals for minerals extraction and waste management should ensure protection of water resources, particularly when river abstraction and/or groundwater sources may be affected. The potential for impact on water quantity, quality and flow should be assessed through hydrological and hydrogeological assessments to establish the base line position and ensure operations are appropriately designed, monitored and managed. The Council will seek to avoid:

- significant change to groundwater or surface water levels, for example, the process of 'dewatering' (when water is pumped out of a pit to allow dry working below the water table) must be carefully monitored, to ensure no adverse impacts on surrounding water availability; and,
- pollution of ground and surface water by chemicals and other contaminants, for example a considerable amount of water can be used when processing wastes or aggregates; drainage during site operations and any discharge to local watercourses, must be controlled to comply with standards set by the Environment Agency.

It is recommended that this text is included as part of an additional policy on water. The policy should also refer to the protection of Source Protection Zones and designated waterbodies.

Recommendation:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments do not cause unacceptable adverse impacts on the water environment. The policy should also refer to the protection of Source Protection Zones and designated waterbodies.

The recommendation outlined for SA objective 3: Health to include a new policy on cumulative impacts should also address the potential negative cumulative impacts on the water environment. Through the implementation of the above policies and recommendations, in addition to the recommendations made under SA objectives 3 and 12, there will be **no residual significant negative effect** in relation to SA objective **14: Water**.

SA Objective 15 - Reduce the risk of flooding and the resulting detriment to public well-being, the economy and the environment

Policy *SD5: Site Reclamation* supports site reclamation schemes which have the potential to create wetland habitats, thereby providing flood storage.

Policy *SD3: Sustainable water management and water resources* requires development proposals to reduce flood risk; to avoid an adverse impact on water quality; to protect and enhance groundwater resources; and, to provide opportunities to enhance biodiversity, health and recreation. It also states that developments will be located in accordance with the Sequential Test and Exception Test (where appropriate).

Recommendation:

The HMWLP should include an additional policy which states that mineral workings and

waste developments should not increase flood risk elsewhere and need to be designed, worked, and restored accordingly.

The recommendation outlined for SA objective 3: Health to include a new policy on cumulative impacts should also address the potential negative cumulative impacts on flood risk. Through the implementation of the above policies and recommendations, in addition to the recommendation under SA objective 3, there will be **no residual significant negative effect** in relation to SA objective **15: Flooding**.

SA Objective 16 - Minimise noise, light, and air pollution

Policy *SD1: Sustainable design and energy efficiency* of the Core Strategy applies to minerals and waste developments and requires planning proposals to ensure that new development does not contribute to, or suffer from, adverse impacts arising from noise, light or air contamination. Core Strategy policy *SS6: Environmental quality and local distinctiveness* requires proposals to consider their impact on residential and local amenity, including light pollution and air quality.

The recommendation outlined for SA objective 3: Health to include a new policy on cumulative impacts should also address the potential negative cumulative impacts from noise, light and air pollution. Through the implementation of the above policies and the recommendation made under SA objective 3, there will be **no residual significant negative effect** in relation to SA objective **16: Pollution**.

SA Objective 17 - Value, protect and enhance soil quality and resources

Policy *SD5: Site Reclamation* supports site reclamation schemes which have the potential to return sites to agricultural use, thereby safeguarding the long-term potential of Best and Most Versatile Agricultural Land and conserving soil resources.

Policy *SS7: Addressing climate change* of the Core Strategy supports the protection of best agricultural land, where possible. The supporting text states that *"areas of lower quality agricultural land will be utilised in preference to the best and most versatile agricultural land, in accordance with the National Planning Policy Framework (Para 112), where possible"* (p.44).

Chapter *7: Strategic Policy and General Principles* of the Draft HMWLP describes existing Core Strategy policies that are directly relevant to minerals and waste development, as well as proposing additional policies of a strategic nature applicable to minerals and waste development. For the description of Core Strategy policy *LD2: Biodiversity and geodiversity*, the Draft HMWLP provides an explanation of how mineral and waste developments should protect and conserve soil resources. It is recommended that this text is included as part of an additional policy on the soil environment. According to the Draft HMWLP, planning applications should consider the following in demonstrating that mineral development on the Best and Most Versatile Agricultural Land is necessary:

- whether there is an available alternative;
- whether the need for development outweighs the adverse impact upon agricultural land quality;
- whether proposals will affect the long term agricultural potential of the land or soils; and,
- whether alternative land of lower agricultural value has considerations which outweigh the adverse impact upon agricultural land quality.

It also states that the protection of the original soils removed prior to mineral extraction should always be a priority. Furthermore, the stripping and storage of soils for reuse and restoration can lead to degradation, although best practice in soil management can minimise the impacts of this damage. Planning applications should demonstrate how best practice measures for soil handling and storage will be achieved on site, throughout the life of the development. Reclamation schemes should incorporate remediation activities and after-use proposals that optimise the storage and use of best and most versatile soils.

It is also recommended that the text described for Core Strategy policy *SD1: Sustainable design and energy efficiency* should be included as part of an additional policy on the soil environment.

The Draft HMWLP states that proposals should demonstrate the measures to be used to ensure that quarry sides and slopes are stable and will not result in landslip, either within the site or on adjoining land, both during and after the lifetime of the development. Waste stockpiles and mineral waste tips should be constructed and accessed so that they are unlikely to give rise to danger through instability, using suitable vegetation which can assist with stability and bring environmental benefit. Where there is any likelihood of instability, a stability report should be provided setting out measures appropriate to ensure the continued stability and integrity of infrastructure adjoining or close to the development site.

Recommendation:

The HMWLP should include an additional policy outlining criteria which development proposals must demonstrate have been considered to ensure that proposed developments do not cause unacceptable adverse impacts on the soil environment.

Through the implementation of the above policies and recommendations, in addition to the recommendation on cumulative impacts made under SA objective 3 and the recommendation on climate change made under SA objective 10, there will be **no residual significant negative effect** in relation to SA objective **17: Soil**.

Monitoring

Table 9 sets out a number of suggested indicators for monitoring the potential significant effects of implementing the Plan. Where possible, the indicators proposed draw from those in the monitoring framework presented in the Draft HMWLP. However, additional indicators have been proposed where no relevant indicators are included in the Draft HMWLP (shown in italics).

Table 9 Proposed Monitoring Framework for the HMWLP

SA Objective	Proposed monitoring indicators (those not in the Draft HMWLP shown in *italics*)
Healthy and Prosperous Communities	
3. Protect and improve the health of the people of Herefordshire, and reduce disparities in health geographically and demographically.	Record of new public access to outdoor spaces and impact on open spaces and rights of way. *The number and % of minerals and waste approvals that were for operational 'improvements' to existing sites to mitigate adverse effects on public health and/or enhance local amenity.* *The number and % of minerals and waste applications refused where concerns over public health acted as part of the reason for refusal.* *The number and % of minerals and waste approvals that included conditions concerning noise, hours of operations, traffic and lighting.* *The number and % of minerals and waste applications refused on cumulative impact grounds.* *The number and % of minerals and waste applications refused on more general health and amenity grounds.*
Transport and Access	
5. Reduce road traffic, congestion and pollution, and promote sustainable modes of transport and efficient movement patterns in the county.	Record of on-site transport methods and associated green infrastructure. *The number and % of minerals and waste applications refused on transport grounds.* *The number and % of minerals and waste permissions that included non-road based transport.* *The number and % of minerals and waste approvals that included conditions concerning air pollution control.* *The number and % of minerals and waste permissions that*

SA Objective	Proposed monitoring indicators (those not in the Draft HMWLP shown in *italics*)
	included one or more of the following highway conditions: restricted vehicle numbers; restricted tonnages; restricted routings; and highway mitigation measures – the need for wheel washing, lorry sheeting etc. *Number of minerals and waste planning applications granted contrary to the advice of Highways England.*
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.	*Number and % of minerals and waste applications refused on historic grounds.* *Number and % of all permitted minerals and waste applications that included conditions related to archaeology.* *Number and % of Listed Buildings and Scheduled Ancient Monuments on Buildings at Risk Register (Historic England).* *Number of minerals and waste planning applications granted contrary to the advice of Historic England.*
7. Value, protect and enhance the character and built quality of settlements and neighbourhoods.	*Number of minerals and waste applications refused on townscape sensitivity/character grounds per annum.*
Resource Consumption and Climate Change	
10. Reduce Herefordshire's vulnerability to the impacts of climate change as well as its contribution to the problem.	Record of on-site transport methods and associated green infrastructure. *The number and % of minerals and waste permissions that included non-road based transport.* *The number and % of minerals and waste approvals that included conditions concerning air pollution control.* Record of materials and/or energy recovered and indication of final destination. *The number and % of minerals and waste applications permitted that include low carbon energy initiatives/sources.*
Environmental	
12. Value, maintain, restore and expand county biodiversity and geodiversity.	Record of reclamation achieved and associated green infrastructure. *Number and % of minerals and waste applications refused on biodiversity and geodiversity grounds.* *Number of minerals and waste planning applications granted contrary to the advice of Natural England.* *Condition status of River Wye and River Lugg SAC/SSSIs (Natural England).*
13. Value, protect, enhance and restore the landscape quality of Herefordshire, including its rural areas and open spaces.	Record of reclamation achieved and associated green infrastructure. *Number and % of minerals and waste applications refused in AONB.* *Number of minerals and waste applications refused on landscape sensitivity/character grounds per annum.* *Number of minerals and waste planning applications granted contrary to the advice of Natural England.*
14. Value, protect and enhance the quality of watercourses and maximise the efficient use of water.	Record of waste management practice(s) presented and water quality assessments of the River Wye and River Lugg. *The number and % of minerals and waste applications refused on water quality/safeguarding grounds.* *The number and % of minerals and waste approvals that included conditions concerning water pollution control.* *Number of minerals and waste planning applications granted contrary to the advice of Natural England and/or Environment*

SA Objective	Proposed monitoring indicators (those not in the Draft HMWLP shown in *italics*)
	Agency.
15. Reduce the risk of flooding and the resulting detriment to public well-being, the economy and the environment.	*The number and % of minerals and waste applications refused on flooding grounds.* *The number and % of minerals and waste approvals that included conditions to mitigate flood risk.* *The number and % of minerals and waste applications refused/permitted in flood risk zones 2b and 3.* *Number of minerals and waste planning applications granted contrary to the advice of the Environment Agency.*
16. Minimise noise, light, and air pollution.	*The number and % of minerals and waste approvals that included conditions concerning noise, hours of operations, traffic and lighting.* *The number and % of minerals and waste approvals that included conditions concerning air pollution control.*
17. Value, protect and enhance soil quality and resources.	*The number and % of minerals and waste approvals on Grade 1, 2 or 3a agricultural land.*

Conclusions

The policies and site allocations included in the Draft HMWLP have been subject to a detailed appraisal against the SA objectives which were developed at the Scoping stage of the SA process.

The Draft HMWLP provides well-reasoned proposed policies and a clear guide to minerals and waste development based on sound sustainable development principles. In general, the Draft HMWLP has been found to have a wide range of positive and significant positive effects on the SA objectives, although a notable proportion of negative and significant negative effects have also been identified, mainly in relation to the allocation of particular minerals and waste sites. However, many of these effects are uncertain, as the likelihood of and severity of these effects will depend very much on the exact location, scale and design of minerals and waste developments pursued. There is likely to be a residual significant negative effect in relation to SA objective **10: Climate Change** as the Draft HMWLP supports the development of unconventional hydrocarbons. In addition, many potential positive effects expected will depend on how well policy requirements from the Core Strategy and other policies within the HMWLP are implemented, and the type of restoration achieved at minerals and waste sites.

The SA has inevitably had to make assumptions in coming to judgements of the effects of the Draft HMWLP. Our assumption with respect to effects, cumulative or otherwise, is on the basis of the intention of the Draft HMWLP (i.e. what it is trying to achieve). Past experience suggests that, when considering development proposals, there will often be tensions when applying different policies, and deciding where weight should apply. Despite the best intentions of the planning authority, it may not always be possible to deliver development that meets all policy criteria and good practice guidance, and difficult choices will often have to be made. This highlights the importance of monitoring the potential significant effects identified once the HMWLP is adopted.

Next steps

This NTS and the SA Report will be available for consultation alongside the Draft HMWLP in early 2019, for a 6 week period.

Following the consultation on the Draft Herefordshire Minerals and Waste Local Plan, the responses received and the findings of the SA will be reviewed and incorporated into the Submission Draft Herefordshire Minerals and Waste Local Plan. An updated NTS and SA Report will also be prepared to accompany that version of the HMWLP.

LUC

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