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Sustainability Appraisal of the Worcestershire Minerals Local Plan Appendices: Volume 1

Fourth Stage Consultation

Prepared by LUC
November 2018

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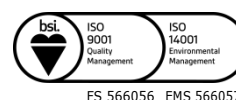
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Planning & EIA
Design
Landscape Planning
Landscape Management
Ecology
GIS & Visualisation

LUC LONDON
43 Chalton Street
London
NW1 1JD
T +44 (0)20 7383 5784
london@landuse.co.uk

Offices also in:
Bristol
Edinburgh
Glasgow
Lancaster
Manchester



Land Use Consultants Ltd
Registered in England
Registered number: 2549296
Registered Office:
43 Chalton Street
London NW1 1JD
LUC uses 100% recycled paper

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Appendix 1

Consultation comments

Table A1.1: Summary of comments received in response to the SA Scoping Report and actions taken as a result of these

Summary of comments	Action taken / WCC Officer Response
Natural England	
Include the emerging Worcestershire Green Infrastructure Strategy in the review of plans, policies, and programmes	Revised Scoping Report includes the GI Strategy. All elements of GI were already covered within the objectives, so no further changes to the framework were necessary.
Compatibility between landscape and energy should be classed as 'uncertain' rather than 'potentially incompatible'. The same applies to housing and technology and innovation, and to biodiversity and growth, housing, and technology and innovation.	While it is accepted that many of these can exist harmoniously, it is nevertheless possible that incompatibilities could occur (and frequently do, as evidenced by planning and appeal decisions). The inclusion of "potentially" is considered sufficient to demonstrate that incompatibility could occur, but may not.
Historic England	
Potential impacts on the historic environment should include cross or trans-boundary effects relevant to the plan area as well as cumulative effects.	Wording in Chapter 3 has been amended to reflect the potential for cross-boundary effects. The potential for "trans-boundary" effects in SEA Directive terms- i.e. effects which cross member state boundaries – are considered unlikely, but will be considered if they arise.
All appropriate mitigation, enhancement and monitoring should be clearly identified for delivery at the implementation stage.	Agreed. No change to the SA framework is required. The Scoping Report does refer to the need for mitigation and the aim of maximising beneficial effects.
The European Landscape Convention recognises that the landscape is shaped by natural and cultural influences. The appraisal should recognise the cultural/historic dimension of the landscape, as in the county Historic Landscape Characterisation.	Agreed. The Scoping Report has been amended to ensure that the HLC is referenced and include in the document review. No change to the SA framework is required.
Include reference to 'Mineral Extraction and the Historic Environment' and 'Mineral Extraction and Archaeology: A Practice Guide' in the review of plans, policies, and programmes.	Agreed. Both documents are included within the Scoping Report's document review.
Emphasis should be placed on the conservation and enhancement of heritage assets (designated and undesignated) and the wider historic environment.	Agreed. The SA is designed to take account of all effects on the historic environment. Due to practical necessity, however, it may only be possible to identify national-level designations when undertaking a strategic appraisal. More detailed appraisals may be needed through the planning process. No change to the SA framework required.
Policy should be informed by '... an understanding of the significance of a heritage asset, including its setting'.	Agreed. The Scoping Report does reflect the need to consider the historic environment in its widest sense. No change to the SA framework is required.
Under the economic themes it may be relevant to consider the potential of small-scale mineral workings in supplementing the rural economy. This can be the case for traditional building and roofing stone which may be supplied by small-scale and short-term workings.	The Scoping Report allows for these issues to be recorded where relevant in the appraisal. No change to the SA framework is required.
Recycling materials may also be of benefit, particularly in the context of traditional building and roofing stone.	The Scoping Report allows for these issues to be recorded where relevant in the appraisal. No change to the SA framework is required.
Under the condition of the landscape theme it would be useful to highlight the countywide Historic Landscape Characterisation (HLC) and its relationship to	The condition of the landscape is a specific indicator within the county's 'State of

Summary of comments	Action taken / WCC Officer Response
the landscape character assessment.	the Environment' report, and so it is not possible to modify it.
Appraisal should be informed by the county-wide Resource Assessment of Archaeology and Aggregates from 2007.	Agreed. This assessment has been added to the document review. No changes to the SA framework are required.
With regard to traditional building and roofing stone a key baseline resource is the Strategic Stone Study Database and the accompanying Building Stone Atlas of Worcestershire.	Noted. These documents will be useful in guiding the MLP. No change to the SA Scoping Report is required.
Recommend amendment to wording of the first part of Issue 3 to 'Conserve and enhance the historic environment, heritage assets and their settings'.	The issues raised here will be fully considered in the appraisal, but it is not considered necessary to amend the wording of the objective.
Recommend the second part of the objective becomes a separate objective focused on design matters.	In the interests of restricting the size of the SA framework, it is considered that an additional SA objective is not required.
Heritage interests should also be included in Issue 4 (material assets).	Having heritage assets covered in issue 4 as well as issue 3 risks duplication and could complicate the appraisal. No change to the SA framework is required.
Supporting indicators could be extended. Various examples were provided, including 'Number of quarries supplying sources of traditional building and roofing materials'.	Noted. The potential indicators suggested are recognised as valuable options and will be considered in revising the SA framework.
Environment Agency	
The paramount concern is for water resources within groundwater Source Protection Zones. The need to protect water resources is critical for people and the economy as well as for the environment.	This is covered under the water and air quality SA objective. No change to the SA framework is required.
Concerned over assessment of potential impacts on flooding, due to lack of site-specific detail. Mitigation measures to reduce flood risk and provide betterment can be recommended.	The SA objective on flooding will consider this at a strategic level; more detailed site-specific issues may need to be addressed through flood risk assessments. No change to the SA framework is required.
As well as fluvial flood risk, other possible causes of flooding would also need to be addressed, including mitigation for all stages of operation and restoration.	These issues can be identified in any proposed mitigation. The current SA objective on flooding provides an opportunity to consider the risks and opportunities that new development could have on flooding. No change to the SA framework is required.
The Catchment Flood Management Plan and Severn River Basin Management Plan should be referred to.	The River Basin Management Plan is already referred to in the Scoping Report. The Catchment Flood Management Plan has been added to the document review.
The importance of adequate monitoring to provide evidence and enforcement in the long lifetime of mineral planning permissions is critical to sustainable outcomes.	Agreed. The SA report will include more information on the need for and proposed approach to monitoring. No change to the SA framework is required.
Sustainable transport would benefit from further investigation and definition – should the lowest carbon footprint overall be used? Is river use by freight compatible with sustainable habitats?	The SA framework is designed to enable these different aspects to be discussed in a transparent way. As such, a transport proposal may have positive effects on, for example, the climate change SA objective, whilst potentially having negative effects on the biodiversity SA objective. No change to the SA framework is

Summary of comments	Action taken / WCC Officer Response
	required.
South Worcestershire Authorities	
The identification of preferred areas for mineral extraction should be subject to testing of environmental acceptability through a Sustainability Appraisal / Strategic Environment Assessment and Habitats Regulations Assessment.	The Minerals Local Plan, including the policy framework and any locations identified will be informed by a Sustainability Appraisal (incorporating a Strategic Environmental Assessment) and a Habitats Regulations Assessment.

Table A1.2: Summary of comments received in response to the Initial SA Report (accompanying the Second Stage Consultation MLP) and actions taken as a result of these

Comment	Action taken / WCC officer response
Historic England (then English Heritage)	
<p>We note the accompanying sustainability appraisal report for the emerging Minerals Plan.</p> <p>We would hope for continued reference to the English Heritage Strategic Environmental Assessment, Sustainability Appraisal and the Historic Environment guidance to ensure future versions of the SA consider the historic environment – http://www.english-heritage.org.uk/publications/strategic-environ-assessment-sustainability-appraisal-historic-environment/SA_SEA_final.pdf</p> <p>At an earlier stage of consultation English Heritage raised a number of general principles that we encourage be used to inform the SEA and the preparation of the emerging Minerals Plan.</p> <p>Briefly,</p> <ul style="list-style-type: none"> •The importance of a broad definition of the historic environment •The value of heritage assets as finite resources •The recognition of the historic environment as a driver for environmental, social and economic benefit •The historic environment as a 'cultural asset' •Recognition of the importance of the 'significance' of heritage assets •Any assessment should include consideration of cross-boundary effects •The SEA as a tool for assessing impacts – mitigation, reduction, avoidance •An effective SEA should maximise the benefits for the historic environment •Clear monitoring should be set out, including relevant indicators for the historic environment •Engaging local heritage groups and societies, and the wider community, can engender positive effects for the SEA and the Plan itself. <p>In respect of Relevant Plans/Programmes/Policies and Objectives English Heritage recognises the use of SSSD, HLC and HER in evidencing the SEA and the preparation of the emerging Minerals Plan. We would welcome continued use of these key resources in informing decisions as the process continues.</p> <p>We support the inclusion of specific objectives for the historic environment within the assessment, especially having taken on board our previous comments relating to 'heritage at risk'. We would encourage further</p>	<p>The comments were taken into account in producing the Third Stage MLP SA "Environmental Report", but were not specifically reported within that document.</p> <p>Additional LUC comment: These comments were also taken into account in further stages of the SA.</p> <p>The SA now explicitly reflects many of the points raised and sets out the limitations to assessment of effects on the historic environment at this strategic level. Potential cross boundary effects are recognised, where applicable, although this was only possible with regards to nationally designated features, as local designations and information on non-designated assets was not available for surrounding local authority areas.</p> <p>Specific monitoring indicators for the historic environment have been included.</p>

Comment	Action taken / WCC officer response
<p>consideration of relevant historic environment indicators such as protecting and enhancing townscape and landscape and the value of place, archaeology as a consideration, the importance of high quality design sensitive to setting etc.</p> <p>We would welcome consideration into including monitoring indicators appropriate to the historic environment within the SEA.</p> <p>We would anticipate the SEA to inform your preferred options regarding the amount and location of minerals development, in line with the principles of sustainable development. We note the comment within the SEA that states lesser development is likely to have a lesser effect on the historic environment. We support the assertion in the SEA that the emerging Minerals Plan should set out a positive strategy for the enhancement of the historic environment and we anticipate this will be included in future versions.</p>	
Natural England	
<p>Q. Do you agree that the Initial SA has appraised the appropriate sections of the MLP?</p> <p>A. Yes.</p> <p>Q. Has the Initial SA correctly identified the significant effects that could arise from each of the MLP's policy directions?</p> <p>A. Yes.</p> <p>Q. Does the SA provide sufficient analysis of alternatives to appraise the performance of the MLP?</p> <p>A. Yes.</p> <p>Q. Does the SA strike an appropriate balance between the social, environmental and economic impacts likely to arise from the MLP?</p> <p>A. Yes.</p> <p>Q. Are you aware of any baseline data or plans, policies or programmes that would require the SA Framework to be revised?</p> <p>A. No.</p>	<p>As above, these comments have been taken into account in preparing following iterations of the SA.</p>

Table A1.3: Summary of comments received in response to the SA Report accompanying the Third Stage Consultation MLP and actions taken as a result of these

Comment	Action taken / WCC officer response
Gladman Developments Ltd	
<p>Sustainability Appraisal</p> <p>In accordance with Section 19 of the Planning and Compulsory Purchase Act 2004, policies set out in Local Plans must be subject to a Sustainability Appraisal (SA), and also incorporate the requirements of the Environmental Assessment of Plans and Programmes Regulations 2004 (the SEA regulations). The SA/SEA is a systematic process that should be undertaken at each stage of the Plans preparation, assessing the effects of the emerging Minerals Local Plan proposals on sustainable development when judged against all reasonable alternatives. The Council should ensure that the future results of the SA clearly justify any policy choices. It should be clear from the results of this assessment why some policy options have progressed, and others have been rejected. This must be undertaken through a comparative and equal assessment of each reasonable alternative, in the same level of detail for the chosen and rejected alternatives. The Council's decision making and scoring should be robust, justified and transparent.</p>	<p>A Scoping Report was prepared and consulted on alongside the First Stage Consultation on the Minerals Local Plan. An Initial Sustainability Appraisal was prepared and consulted on alongside the Second Stage Consultation, and an Environmental Report was prepared and consulted on alongside the Third Stage Consultation on the Minerals Local Plan.</p> <p>Consideration will be given to ensuring that policy choices and alternatives are more clearly recorded with increased transparency through future iterations of the Sustainability Appraisal.</p> <p>Additional LUC comment: The SA is one of many factors the Council considers when deciding on the preferred approach for the MLP. The SA provides an objective record of the likely sustainability implications of each option, which is used by the Council to inform their decision making. As such, it is not for the SA to justify the Council's policy choices per se. Nevertheless, the SA includes information on how the reasonable alternatives were identified, why the preferred options were taken forward and why others were not, in line with the PPG.</p>
Historic England	
<p>We have made comments at previous stages of the Strategic Environmental Assessment (SEA).</p> <p>We welcome the inclusion of a separate objective for the historic environment on cultural heritage.</p> <p>We welcome recognition within paragraph 4.3.17 about the historic environment being a finite resource and that minerals development has the opportunity to physically damage or destroy it. Paragraph 4.3.20 looks at the role of mitigation measures where there are negative effects for the historic environment. Historic England considers that where mitigation measures are required or identified that these should be included within the Minerals Local Plan to form part of the positive strategy for the historic environment and the development plan.</p>	<p>Noted.</p>
<p>Paragraph 4.6.13 states that listed buildings and scheduled monuments have been assessed in the SA process. Have all designated assets been assessed as part of this process? There is also the potential for as yet unknown archaeology to be worthy of designation, which could be uncovered by minerals development.</p>	<p>The references in Paragraph 4.6.13 apply to the appraisal of specific sites and preferred areas. At this strategic level, it would be inappropriate to attempt to identify likely effects on specific historic environment receptors across entire corridors. The text will be amended to make this clearer.</p> <p>Additional LUC comment: All nationally designated assets have been considered and locally important historic parks and gardens have also been considered. As noted in WCC's comment above, detailed assessment of each asset has not been undertaken as it is not proportionate to the scale of the SA. The SA now recognises</p>

Comment	Action taken / WCC officer response
	the potential for unknown archaeology to exist at any location across the county.
<p>We support paragraph 5.6.3 and the need for the restoration principles to better reflect the historic environment. We consider that the assessment needs to consider what is special about the historic environment within the strategic corridors and then incorporate this information into the restoration principles and have specific requirements for the historic environment.</p>	<p>Noted.</p> <p>Future iterations of the SA will seek to further explore how the strategic corridors relate to the historic environment and how far any modified policies and green infrastructure priorities achieve these aims.</p> <p>Additional LUC comment: A specialist historic environment assessment has not been undertaken to inform more specific considerations of unique features of Worcestershire’s historic environment. As such, more detailed assessment is beyond the scope of the SA, which seeks primarily to flag up areas for potential harm to the historic environment, including in terms of cumulative effects. Should any more specialist work be undertaken, this will be considered as appropriate through the SA process. It is expected that site-specific restoration plans will have due regard to the historic environment, including the wider historic landscape of Worcestershire.</p>
<p>Page 59 Summary of SA findings for the Strategic Corridors – we are unclear why there is considered no impact for the historic environment for three strategic corridors? Has there been assessment to inform that there are no likely impacts for the historic environment in respect of heritage assets both designated and undesignated? There are considered negative effects for the historic environment from two of the strategic corridors, are there mitigation measures that could overcome these negative effects?</p>	<p>The Lower Severn strategic corridor has been rated as a minor negative/ unknown, due to the fact that it contains specific sites and a preferred area, and concerns have been raised over the potential for historic environment harm at these locations.</p> <p>Similarly, the North West Worcestershire strategic corridor contains a preferred area which may have a heightened potential for certain historic environment issues to arise.</p> <p>The other three strategic corridors do not contain either preferred locations or specific sites for which historic environment concerns have been raised at this stage. However, consideration will be given to whether it would be appropriate to change many of the 'no effect' judgements to 'unknown effect' to better reflect these concerns.</p> <p>In terms of mitigation, the SA states at pages 119/120 that "The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP, including Policy MLP 23 Historic Environment".</p> <p>Additional LUC comment: This summary will be updated in future iterations of the SA to more clearly summarise the potential effects of the Strategic Corridors on the historic environment. The updated assessments will consider potential impacts of development within the strategic corridor; whether or not more detailed allocations (i.e. Areas of Search) have been made within these.</p> <p>Suggested mitigations measures to overcome potential significant negative effects on the historic environment are set out in the main SA Report.</p>
<p>Page 65/66 Summary of SA findings for the specific sites identifies a range of negative effects for the historic environment. Historic England has raised concerns about the allocation of these sites in previous consultation rounds and would require further assessment to be undertaken as well as specific</p>	<p>Noted.</p> <p>Section 4.7.2 of the SA Environmental Report notes that "SA cannot provide a full, site-level consideration of every impact of every policy. More localised assessments,</p>

Comment	Action taken / WCC officer response
restoration principles that will protect and conserve the historic environment after the minerals working has finished.	such as those made through the planning application process, will be crucial in fully understanding the sustainability of any particular development". Additional LUC comment: Note that specific sites are no longer included in the Minerals Local Plan.
We noted that the Council has looked at other reasonable alternatives and that during a number of 'call for sites', the interest has been low. We also recognise that the Council could have safeguarded larger strategic corridors or more in number so we are content that alternatives have been considered.	Noted.
Page 129, Appraisal of options, we are not convinced that Policy MLP23 in its current form will sufficiently mitigate against the effects of the development. We have requested some amendments to the Local Plan to overcome this.	We understand this comment relates to the 'Cultural heritage, architecture and archaeology' row on page 128, rather than page 129. We recognise that in order for mitigation to be effective, Policy MLP23 as currently drafted will require amendment. Additional LUC comment: It is the role of the SA to assess the policies contained in the MLP. Amendments are to be considered separately by WCC officers.
Page 142 onwards, Appraisal of Strategic Corridors, we disagree with the assumption that because development boundaries are not yet known that this means there will not be an effect. The SA identifies a wide range of heritage assets that could be affected throughout the allocation of strategic corridors and it is important the Local Plan considers these effects and has a positive strategy for the historic environment and justifies the harm to heritage assets. Whilst we recognise this is difficult because development boundaries are not known, the Plan needs to ensure that there are measures in place to overcome this, if this strategy is to be employed. Additionally, the assessment notes that the restoration principles have not been especially guided by the historic environment, which we consider needs to be amended.	Noted. Consideration will be given to whether it would be appropriate to change many of the 'no effect' judgements to 'unknown effect' to better reflect these concerns. As noted above, the approach to policy MLP23 will be reviewed in light of consultation feedback. A more robust policy MLP23 would help to ensure that these concerns are taken into account when development proposals come forward. The next iteration of the SA will appraise how far any modified policies and green infrastructure priorities achieve these aims. Additional LUC comment: The SA of the Fourth Stage MLP and further iterations have considered the potential effects of minerals development coming forward anywhere in the strategic corridors, taking into account the updated criteria for assessing strategic corridors and preferred areas. With regards to the restoration principles, it is the role of WCC to make any updates to the MLP itself.
Page 322 onwards, Appraisal of Specific Sites and Preferred Areas, this assessment identifies a number of concerns for the historic environment and details some appropriate mitigation measures that could potentially overcome some of these effects. We consider that before these sites/areas are allocated that more detailed assessment is undertaken. Additionally, we consider that the mitigation measures could be further developed as there are still comments within the assessment that state that 'the scale of any impacts arising from this is unclear at this stage' etc. We would request to see inclusion of appropriate mitigation measures in the Plan, as design principles, to guide developers when they submit planning applications. This will give greater certainty to Historic England and to the	Noted. It may be possible, through the next stage of the plan-making process, to identify potential sites with more certainty. This would allow for a more detailed appraisal of the potential effects on the historic environment and could lead to the identification of more specific mitigation measures. Otherwise, the MLP includes a full range of policies to manage and mitigate the negative effects of any development. The corridor priorities should help to inform proposals within the corridors, but any more specific design principles may require the production of site specific development briefs. The next iteration of the SA will assess whether the Plan contains sufficient guidance or whether further guidance may be needed, for example in the form of SPDs. Additional LUC comment: This comment refers primarily to the content of the

Comment	Action taken / WCC officer response
development industry about expectations for the historic environment.	plan itself, rather than the SA.

Appendix 2

Relevant Policies, Plans, Programmes and Sustainability Objectives

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for emerging Minerals Local Plan	Implications for the sustainability appraisal
European			
Habitats Directive (92/43/EEC)	Aims to protect wild plants, animals and habitats. Directive created a network of protected areas called Natura 2000 sites, including Special Areas of Conservation (SACs) – supporting rare, endangered or vulnerable natural habitats, plants and animals (other than birds), and Special Protection Areas (SPAs) – supporting significant numbers of wild birds and their habitats.	MLP should seek to conserve and enhance biodiversity, and avoid any significant impacts on Natura 2000 sites. In determining site allocations, account should be taken of the particular sensitivities of each Natura 2000 site that could potentially be affected, and advice from Natural England should be sought.	Ensure biodiversity objective within SA framework. HRA Scoping will assess whether full Appropriate Assessment is necessary.
Birds Directive (2009/147/EC)	Emphasises protection of habitats for endangered and migratory species, especially through the establishment of a coherent network of Special Protection Areas (SPAs).	MLP should seek to conserve and enhance biodiversity, and avoid any significant impacts on SPAs. In determining site allocations, account should be taken of the particular sensitivities of each SPA site that could potentially be affected, and advice from Natural England should be sought.	Ensure biodiversity objective within SA framework. HRA Scoping will assess whether full Appropriate Assessment is necessary.
Water Framework Directive (2000/60/EC)	Looks at the ecological health of surface water bodies as well as achieving traditional chemical standards. In particular it will help deal with diffuse pollution. Successful implementation will help to protect all elements of the water cycle and enhance the quality of our groundwaters, rivers, lakes, estuaries and seas.	MLP should be informed by the WFD's aims and objectives. Policies should include strict requirements to prevent water pollution from extractive industries.	Ensure water quality forms part of SA framework.
Air Quality	Merges most existing air quality legislation into a single directive that sets standards and	MLP should seek to	Ensure air quality

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for emerging Minerals Local Plan	Implications for the sustainability appraisal
Directive (2008/50/EC)	target dates for reducing concentrations of fine particles, which together with coarser particles known as PM10 already subject to legislation, are among the most dangerous pollutants for human health. Under the directive Member States are required to reduce exposure to PM2.5 in urban areas by an average of 20% by 2020 based on 2010 levels. It obliges them to bring exposure levels below 20 micrograms/m ³ by 2015 in these areas. Throughout their territory Member States will need to respect the PM2.5 limit value set at 25 micrograms/m ³ .	protect air quality through policies to limit dust and emissions from minerals activity and transportation.	objective within SA framework.
Floods Directive (2007/60/EC)	Concerns the assessment and management of flood risk and requires Member States to assess if all water courses and coast lines are at risk from flooding, to map the flood extent and assets and humans at risk in these areas and to take adequate and coordinated measures to reduce this flood risk. Also reinforces the rights of the public to access this information and to have a say in the planning process.	Minerals working and processing is a 'less vulnerable' land use, and therefore development can be appropriate in Flood Zones 1, 2 and 3a. Sand and gravel working is classed as 'water compatible', and can be appropriately located in any of the above Flood Zones as well as in the functional flood plain (Flood Zone 3b). Policies should ensure that minerals operations do not increase the risk of flooding elsewhere. Plan preparation should be informed by the findings of an SFRA. The MLP should be informed by the findings of an SFRA.	Ensure flooding objective within SA framework.
Mining Waste Directive (2006/21/EC)	Overall objective is to prevent or reduce any adverse effects on the environment and risks to human health from the management of waste from the extractive industries.	MLP should seek to minimise waste from minerals operations. Policies should promote the waste hierarchy and require site waste management plans where appropriate.	Ensure waste objective within SA framework.

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for emerging Minerals Local Plan	Implications for the sustainability appraisal
Waste Framework Directive (2008/98/EC)	<p>The Directive sets the basic concepts and definitions related to waste management, and lays down some basic waste management principles. It requires that waste be managed without endangering human health and harming the environment, and in particular without risk to water, air, soil, plants or animals, without causing a nuisance through noise or odours, and without adversely affecting the countryside or places of special interest. It requires waste legislation and policy to apply the waste management hierarchy: of prevention; preparing for re-use; recycling; recovery; and disposal.</p> <p>The Directive introduces the "polluter pays principle" and the "extended producer responsibility". It incorporates provisions on hazardous waste and waste oils, and includes two new recycling and recovery targets to be achieved by 2020: 50% preparing for re-use and recycling of certain waste materials from households and other origins similar to households, and 70% preparing for re-use, recycling and other recovery of construction and demolition waste.</p>	MLP should seek to minimise waste from minerals operations and encourage the waste hierarchy to be followed. Policies should promote the waste hierarchy and require site waste management plans where appropriate. Cross-references to the Waste Core Strategy would also be valuable.	Ensure waste objective within SA framework.
Environmental Noise Directive (2002/49/EC)	Aims to avoid, prevent or reduce on a prioritised basis harmful effects, including annoyance, due to exposure to environmental noise. It provides a basis for developing EU measures to reduce noise emitted by major sources, in particular road and rail vehicles and infrastructure, aircraft, outdoor and industrial equipment and mobile machinery. Seeks to address local noise issues by requiring competent authorities to draw up action plans to reduce noise where necessary and maintain environmental noise quality where it is good. The directive does not set any limit value, nor does it prescribe the measures to be used in the action plans, which remain at the discretion of the competent authorities.	MLP should ensure that noise from mineral operations, including transport, is minimised. Policies should require specific measures to limit noise, including bunding and screening where necessary.	Ensure noise objective within SA framework.
European Landscape Convention (2000)	<p>Promotes landscape protection, management and planning, and European co-operation on landscape issues.</p> <p>Highlights the importance of developing landscape policies dedicated to the protection, management and creation of landscapes, and establishing procedures for the general public and other stakeholders to participate in policy creation and implementation.</p>	MLP should seek to protect the landscape from harmful development, whilst recognising that some minerals operations will be temporary and could result in landscape benefits in the longer term. Full consideration should be given to the Worcestershire Landscape Character Assessment Supplementary Guidance and the MLP should direct applicants to this	Ensure landscape objective within SA framework.

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for emerging Minerals Local Plan	Implications for the sustainability appraisal
		guidance.	
Convention for the Protection of the Architectural Heritage of Europe (1985)	Reinforces and promotes policies for the conservation and enhancement of Europe's heritage.	MLP should ensure that the historic environment is conserved and enhanced. Policies should guide development away from the most sensitive locations based on the significance of interest of architectural heritage. Where impacts on historic environment are unavoidable, policies should require assessment and recording where appropriate.	Ensure historic environment and design objective within SA framework.
Convention on the Protection of the Archaeological Heritage (1992)	Updates the previous 1969 Convention and makes conservation and enhancement of archaeological heritage a goal of urban and regional planning policies. It is concerned in particular with arrangements to be made for co-operation among archaeologists and town and regional planners in order to ensure optimum conservation of archaeological heritage. Sets guidelines for funding excavation and research work and publication of findings. Also deals with public access and educational actions to develop public awareness of the value of archaeological heritage.	MLP should ensure that the historic environment is conserved and enhanced. Policies should guide development away from the most sensitive locations based on the significance of interest of archaeological heritage. Where impacts on historic environment are unavoidable, policies should require assessment and recording where appropriate.	Ensure historic environment objective within SA framework.
A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development	Strategy provides EU-wide policy framework to deliver sustainable development: to meet the needs of the present without compromising the ability of future generations to meet their own needs. It rests on four pillars – economic, social, environmental and global governance – which need to reinforce one another. The economic, social and environmental consequences of all policies thus need to be examined in a coordinated manner and taken into account when drawn up and adopted. The strategy is based on the following guiding principles:	MLP should be guided by sustainable development principles. It should foster an open and inclusive approach to planning with	The SA framework will test the sustainability of the MLP and help ensure it embodies sustainable development principles.

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(2001)	promotion and protection of fundamental rights, solidarity within and between generations, the guarantee of an open and democratic society, involvement of citizens, involvement of businesses and social partners, policy coherence and governance, policy integration, use of best available knowledge, the precautionary principle and the polluter-pays principle.	opportunities for public participation and meaningful engagement. It should seek to ensure that economic, social and environmental impacts are balanced wherever possible.	

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National			
Wildlife and Countryside Act 1981 (as amended)	The Act [inter alia] prohibits certain methods of killing or taking wild animals; amends the law relating to protection of certain mammals; restricts the introduction of certain animals and plants; amends the Endangered Species (Import and Export) Act 1976; amends the law relating to nature conservation, the countryside and National Parks; and amends the law relating to public rights of way.	MLP should ensure wildlife protection through policies to protect and enhance biodiversity. Policies should also ensure that public rights of way are taken into account when locating and developing minerals sites.	Ensure biodiversity and access objectives within SA framework.
The Environment Act 1995 (as amended)	Sites with planning permission(s) for the development consisting of the winning and working of minerals or involving the depositing of mineral waste ("minerals development") must be reviewed every 15 years and, where it is considered necessary, new conditions imposed to ensure that they remain up to date. Compensation is payable if new conditions, other than restoration and aftercare conditions, restrict working rights. (extract from MPG4)	The MLP should make clear that minerals planning permissions must be reviewed every 15 years where necessary.	No role identified for the SA.
Natural Environment and Rural Communities Act 2006	Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'. The aim of the biodiversity duty is to raise the profile of biodiversity in England and Wales, so that the conservation of biodiversity becomes properly embedded in all relevant policies and decisions made by public authorities.	MLP should seek to protect and enhance biodiversity through policies to guide locations and operations to avoid adverse impacts, and to seek net gains from restoration.	Ensure biodiversity objective within SA framework.
Guidance for Biodiversity Duty: Public Authority Duty to have Regard to Conserving Biodiversity, Natural England and DEFRA (2014)	<p>The guidance is intended to assist local authorities in meeting the Biodiversity Duty. The conservation of biodiversity is highly dependent on the extent to which it is addressed in infrastructure and development projects and how well the planning process integrates biodiversity into planning and development control policies.</p> <p>Local authorities should be able to show their duty to have regard for conserving biodiversity if they have identified ways to integrate biodiversity when they:</p> <ul style="list-style-type: none"> • develop policies and strategies and put them into practice • manage the planning system • manage: land and buildings, woodlands and nature reserves, gardens, 	MLP should be informed by the guidance in seeking to protect and enhance biodiversity.	Ensure biodiversity objective within SA framework.

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	<p>parks and public open space, community amenities eg sports grounds and cemeteries, waste and pollution, energy and water, wood and plant products.;</p> <ul style="list-style-type: none"> • develop infrastructure ie roads, buildings or flood defences.; • make decisions about procurement.; • implement economic, environmental and social programmes. 		
Climate Change Act 2008 (as amended)	<p>The Act aims to improve carbon management, helping the transition towards a low-carbon economy in the UK and to demonstrate UK leadership internationally. Key provisions of the Act include:</p> <ul style="list-style-type: none"> • a legally binding target of at least an 80% cut in greenhouse gas emissions by 2050 and a reduction in emissions of at least 34% by 2020 (both against 1990 baseline). • a carbon budgeting system that caps emissions over five-year periods. • creation of the Committee on Climate Change. • further measures to reduce emissions, including measures on biofuels. • a requirement for the Government to report at least every five years on the risks to the UK of climate change, and to publish a programme setting out how these will be addressed. The Act also introduces powers for Government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks. 	MLP should seek to ensure that carbon emission arising from minerals development/transport are minimised through directing developments to sustainable locations where possible and encouraging lower-carbon practices in construction of plant and buildings, operations and transport.	Ensure climate change objective within SA framework.
Localism Act 2011	<p>The Localism Act takes power from central government and hands it back to local authorities and communities.</p> <p>Community organisations have the chance to bid to take over land and buildings that are important to them.</p> <p>Local communities can shape new development through Neighbourhood Plans. Once written, the plan will be independently examined and put to a referendum of local people for approval.</p> <p>Neighbourhood Plans will enable local people to ensure there are enough homes in their area by providing planning permission for homes in community ownership (particularly through the Community Right to Build).</p> <p>The 'general power of competence' gives local authorities the legal capacity to do anything an individual can do that isn't specifically prohibited.</p>	MLP process should seek to engage Parish Councils in consultation. Local communities should have adequate opportunities to become involved with the plan as it develops through a variety of consultation methods, including those aimed at hard-to-reach groups.	Ensure participation objective within SA framework.
Flood and Water	The Act addresses the threat of flooding and water scarcity. It defines unitary/county councils as lead local flood authorities for their area, but enables this	MLP should recognise that minerals working	Ensure flooding objective

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Management Act 2010	<p>role to be delegated to another risk management authority by agreement.</p> <p>The Act requires a lead local flood authority to develop, maintain, apply and monitor a strategy for local flood risk management in its area. The Act establishes a SuDS Approving Body (the "SAB"), with responsibility for approving proposed drainage systems in new</p> <p>Developments/redevelopments at county/unitary level. Approval must be given before the developer can commence construction.</p>	<p>and processing is a 'less vulnerable' land use, and therefore development can be appropriate in Flood Zones 1, 2 and 3a. Sand and gravel working is classed as 'water compatible', and can be appropriately located in any of the above Flood Zones as well as in the functional flood plain (Flood Zone 3b). Policies should ensure that minerals operations do not increase the risk of flooding elsewhere. The MLP should be informed by the findings of an SFRA.</p>	<p>within SA framework.</p>
Natural Environment White Paper (2011)	<p>The Natural Environment White Paper has four ambitions:</p> <ul style="list-style-type: none"> Protecting and improving our natural environment Growing a green economy Reconnecting people and nature International and EU leadership <p>It looks at ecosystem services provided by natural systems and promotes a step-change in nature conservation which makes sustainable use of natural capital and natural networks by working at a landscape scale. It aims to ensure that by 2020 17% of England is managed effectively to safeguard biodiversity.</p>	<p>MLP should seek to conserve and enhance biodiversity and to take forward green infrastructure principles. MLP should be informed by the need to contribute to delivery of the key ambitions of the White Paper.</p>	<p>Ensure biodiversity, landscape and community involvement form part of SA framework.</p>
Spatial Planning for Sport and Active Recreation: Guidance on Sport England's Aspirations and Experience (2005)	<p>Spatial planning creates opportunities for addressing the needs, and wider contribution, of sport and active recreation through the development of cross-cutting policies and plans; through multifaceted development proposals which include sports-related elements; through increasing recognition of the role of community interests in shaping space; and through greater partnership working in policy development and delivery.</p> <p>The guidance states that there is the prospect of delivering a planned approach to the provision of facilities, and in doing so adding value to the work of others and helping to deliver sustainable development goals, which might mean taking a</p>	<p>MLP should seek to protect and enhance existing sports and recreation by wherever possible guiding development away from sites that would impact on assets.</p> <p>MLP should take into</p>	<p>A specific sports objective is not considered necessary, but SA objectives on access to services and health will be included in the SA framework.</p>

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	broader view of the role of spatial planning as an enabling function which goes beyond the setting and delivery of land-use policy; identifying opportunities for delivering an enhanced quality of life for communities, in the short, medium and longer term; recognising and taking full advantage of the unique ability of sport and active recreation to contribute to a wide array of policy and community aspirations; the development of partnership working stimulated by, and perhaps centred on, sport and active recreation as a common interest; and using sport and recreation as one of the building blocks of planning and delivery of sustainable communities.	account the opportunities for sport and recreation that could be delivered through site restoration.	
Sustainability Appraisal and Strategic Environmental Assessment, Historic England Advice Note 8 (2016)	<p>This note seeks to provide advice on historic environment considerations as part of the Sustainability Appraisal/Strategic Environmental Assessment process. This document is aimed at all relevant local planning authorities, neighbourhood groups, developers, consultants, landowners and other interested parties.</p> <p>The purpose of this Historic England advice note is to support all those involved in assessing the effects of certain plans on the historic environment. It offers advice on heritage considerations during the SA and SEA process, and on implementing historic environment legislation, the relevant policy in the NPPF and the related guidance given in the PPG as well as the Marine Policy Statement.</p>	MLP should be informed by Historic England advice and ensure Historic England are fully consulted as the MLP develops.	Historic England 'tiering' recommendation has been followed. The MLP SA framework is based on a Worcestershire-wide SA which has been tailored accordingly.
Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended)	Governs special controls in respect of buildings and areas of special architectural or historic interest. Any alteration, extension or demolition of a listed building in a way that affects its character as a building of special interest requires Listed Building Consent.	MLP should ensure that Listed Buildings and Conservation Areas are conserved and enhanced. This includes avoiding adverse impacts through location and design policies, and providing for the materials necessary to ensure the continued maintenance, repair and extension of historic buildings to preserve character and the local vernacular.	Ensure historic environment objective within SA framework.
Ancient Monuments and Archaeological Areas Act 1979	<p>Under the Act a monument which has been scheduled is protected against any disturbance including unlicensed metal detecting.</p> <p>Permission must be obtained for any work which might affect a monument above or below ground. English Heritage gives advice to the Government on each application. In assessing an application the Secretary of State will try to ensure any works on protected sites are beneficial to the site or are essential for its long term sustainability.</p>	MLP should ensure that Ancient Monuments and archaeology are conserved and enhanced. This includes avoiding adverse impacts through location and design policies, and	Ensure historic environment objective within SA framework.

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		providing for the materials necessary to ensure the continued maintenance, repair and extension of historic buildings to preserve character and the local vernacular.	
Proofing for Sport and Active Recreation in Spatial Plans, Sport England (2009)	<p>Guidance sets out a series of checklists to assist with the preparation of regional and local plans, emphasising the opportunities for making the most of the potential for sport and active recreation to contribute to a number of agendas including health, education and regeneration. Though the recommendations for Core Strategies are aimed primarily at district-level plan-making, some are relevant to the Minerals Local Plan, including:</p> <ul style="list-style-type: none"> • to have a policy which clearly states the aspiration to protect and enhance existing facilities, and develop new ones where appropriate, in all cases founded on a sound evidence base.; • to recognise the role of sport in contributing to a wide range of spatial planning issues: regeneration, health promotion, crime reduction, quality of life, etc.; and • to maximise contributions to spatial planning initiatives such as greenspace networks or better use of the urban fringe and the wider countryside. 	MLP should recognise the opportunities afforded by minerals development to provide for sports and recreation facilities. Policies should also seek to protect and enhance existing facilities, and to contribute to a linked green infrastructure network.	A specific sports objective is not considered necessary, but SA objectives on access to services, material assets and health will be included in the SA framework.
National Planning Policy Framework, MHCLG (2018)	<p>Sets out Government planning policy for England. The purpose of the planning system is to contribute to the achievement of sustainable development. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):</p> <p>an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;</p> <p>a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and</p> <p>an environmental objective – to contribute to protecting and enhancing our natural,</p>	<p>The MLP should seek to protect minerals areas from inappropriate development through safeguarding reserves and the infrastructure to support extraction and transportation.</p> <p>The MLP should define criteria against which minerals applications can be determined, including:</p> <p>natural and historic environment or human health, including from noise, dust, visual</p>	<p>The SA is designed to ensure that the social, economic and environmental impacts of minerals extraction are fully considered. The SA framework will help to identify the most sustainable options. It will allow the benefits to be maximised, whilst reducing the potential for negative impacts.</p> <p>It is also important to be open and honest about the impacts of development, and to recognise that there will be instances</p>

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	<p>built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.</p> <p>These objectives should be delivered through the preparation and implementation of plans and the application of the policies in this Framework; they are not criteria against which every decision can or should be judged. Planning policies and decisions should play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area. So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.</p> <p>It is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs. Since minerals are a finite natural resource, and can only be worked where they are found, best use needs to be made of them to secure their long-term conservation.</p> <p>Planning policies should:</p> <ul style="list-style-type: none"> • provide for the extraction of mineral resources of local and national importance, but not identify new sites or extensions to existing sites for peat extraction • so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously; • 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); • set out policies to encourage the prior extraction of minerals, where practical and environmentally feasible, if it is necessary for non-mineral development to take place; • 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; • set out criteria or requirements to ensure that permitted and proposed operations do not have unacceptable adverse impacts on the natural and 	<p>intrusion, traffic, tip- and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the site.</p> <p>The MLP should plan for mineral reserves in accordance with the NPPF and should liaise with other authorities in preparing the plan and defining the scale and location of landbanks for each type of mineral.</p>	<p>where some parties will feel disadvantaged by the impacts of development (or by a refusal to allow development).</p>

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	<p>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;</p> <ul style="list-style-type: none"> • 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 • 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 <p>When determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy. In considering proposals for mineral extraction, minerals planning authorities should:</p> <ul style="list-style-type: none"> • as far as is practical, provide for the maintenance of landbanks of non-energy minerals from outside National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage Sites, scheduled monuments and conservation areas; • ensure that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality; • ensure that any unavoidable noise, dust and particle emissions and any blasting vibrations are controlled, mitigated or removed at source⁶⁶, and establish appropriate noise limits for extraction in proximity to noise sensitive properties; • not grant planning permission for peat extraction from new or extended sites; • provide for restoration and aftercare at the earliest opportunity, to be carried out to high environmental standards, through the application of appropriate conditions. Bonds or other financial guarantees to underpin planning conditions should only be sought in exceptional circumstances; • not normally permit other development proposals in mineral safeguarding areas where they might constrain potential future use for these purposes; • consider how to meet any demand for small-scale extraction of building stone at, or close to, relic quarries needed for the repair of heritage assets, taking account of the need to protect designated sites; and 		

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	<ul style="list-style-type: none"> • recognise the small-scale nature and impact of building and roofing stone quarries, and the need for a flexible approach to the duration of planning permissions reflecting the intermittent or low rate of working at many sites. <p>Minerals planning authorities should plan for a steady and adequate supply of aggregates by:</p> <ul style="list-style-type: none"> • preparing an annual Local Aggregate Assessment, either individually or jointly, to forecast future demand, based on a rolling average of 10 years' sales data and other relevant local information, and an assessment of all supply options (including marine dredged, secondary and recycled sources); • participating in the operation of an Aggregate Working Party and taking the advice of that party into account when preparing their Local Aggregate Assessment; • making provision for the land-won and other elements of their Local Aggregate Assessment in their mineral plans, taking account of the advice of the Aggregate Working Parties and the National Aggregate Co-ordinating Group as appropriate. Such provision should take the form of specific sites, preferred areas and/or areas of search and locational criteria as appropriate; • taking account of any published National and Sub National Guidelines on future provision which should be used as a guideline when planning for the future demand for and supply of aggregates; • using landbanks of aggregate minerals reserves principally as an indicator of the security of aggregate minerals supply, and to indicate the additional provision that needs to be made for new aggregate extraction and alternative supplies in mineral plans; • maintaining landbanks of at least 7 years for sand and gravel and at least 10 years for crushed rock, whilst ensuring that the capacity of operations to supply a wide range of materials is not compromised;- ensuring that large landbanks bound up in very few sites do not stifle competition; and • ensuring that large landbanks bound up in very few sites do not stifle competition; and • calculating and maintaining separate landbanks for any aggregate materials of a specific type or quality which have a distinct and separate market. <p>Minerals planning authorities should plan for a steady and adequate supply of industrial minerals by:</p> <ul style="list-style-type: none"> • co-operating with neighbouring and more distant authorities to ensure an 		

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	<p>adequate provision of industrial minerals to support their likely use in industrial and manufacturing processes;</p> <ul style="list-style-type: none"> • encouraging safeguarding or stockpiling so that important minerals remain available for use; • maintaining a stock of permitted reserves to support the level of actual and proposed investment required for new or existing plant, and the maintenance and improvement of existing plant and equipment; and • taking account of the need for provision of brick clay from a number of different sources to enable appropriate blends to be made. <p>Minerals planning authorities should also:</p> <ul style="list-style-type: none"> • recognise the benefits of on-shore oil and gas development, including unconventional hydrocarbons, for the security of energy supplies and supporting the transition to a low-carbon economy; and put in place policies to facilitate their exploration and extraction • when planning for on-shore oil and gas development, clearly distinguish between, and plan positively for, the three phases of development (exploration, appraisal and production), whilst ensuring appropriate monitoring and site restoration is provided for; • encourage underground gas and carbon storage and associated infrastructure if local geological circumstances indicate its feasibility; • indicate any areas where coal extraction and the disposal of colliery spoil may be acceptable; • encourage the capture and use of methane from coal mines in active and abandoned coalfield areas; and • provide for coal producers to extract separately, and if necessary stockpile, fireclay so that it remains available for use. <p>When determining planning applications, minerals planning authorities should ensure that the integrity and safety of underground storage facilities are appropriate, taking into account the maintenance of gas pressure, prevention of leakage of gas and the avoidance of pollution.</p> <p>Planning permission should not be granted for the extraction of coal unless:</p> <ul style="list-style-type: none"> • the proposal is environmentally acceptable, or can be made so by planning conditions or obligations; or • if it is not environmentally acceptable, then it provides national, local or community benefits which clearly outweigh its likely impacts (taking all 		

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	relevant matters into account, including any residual environmental impacts).		
Planning Practice Guidance, MHCLG	<p>The Planning practice guidance expands on the facilitating the flood risk and sustainable use of minerals section of the NPPF. Specifically, it provides guidance on mineral safeguarding, and expands on the following factors relating to minerals:</p> <p>Planning for minerals extraction; Assessing environmental impacts from minerals extraction; charging for site visits; Restoration and aftercare of minerals site; Planning for aggregate minerals; Planning for industrial minerals; Planning for hydrocarbon extraction; Planning for coal extraction; Minerals planning orders; and Review of minerals planning conditions.</p>	MLP should take full account of the planning practice guidance in developing policy and context on each of these factors.	SA framework should include objectives to assess each of these key issues.
National Planning Policy for Waste, MHCLG (2014)	<p>When determining waste planning applications, waste planning authorities should:</p> <ul style="list-style-type: none"> • only expect applicants to demonstrate the quantitative or market need for new or enhanced waste management facilities where proposals are not consistent with an up-to-date Local Plan. In such cases, waste planning authorities should consider the extent to which the capacity of existing operational facilities would satisfy any identified need.; • recognise that proposals for waste management facilities such as incinerators that cut across up-to-date Local Plans reflecting the vision and aspiration of local communities can give rise to justifiable frustration, and expect applicants to demonstrate that waste disposal facilities not in line with the Local Plan, will not undermine the objectives of the Local Plan through prejudicing movement up the waste hierarchy.; • consider the likely impact on the local environment and on amenity against the criteria set out in Appendix B and the locational implications of any advice on health from the relevant health bodies. Waste planning authorities should avoid carrying out their own detailed assessment of epidemiological and other health studies. • ensure that waste management facilities in themselves are well-designed, so that they contribute positively to the character and quality of the area in which they are located.; • concern themselves with implementing the planning strategy in the Local Plan and not with the control of processes which are a matter for the pollution control authorities. Waste planning authorities should work on the assumption that the relevant pollution control regime will be properly applied and enforced.; • ensure that land raising or landfill sites are restored to beneficial after uses at the earliest opportunity and to high environmental standards through the 	MLP should seek to include policies to reduce waste arising from mineral operations, and to encourage the use of recycled aggregates ahead of newly-won minerals where appropriate. Consideration should also be given to encouraging or requiring site waste management plans and requirements for waste minimisation during any construction of plant and buildings.	Ensure waste objective within SA framework.

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	<p>application of appropriate conditions where necessary.</p> <p>When determining planning applications for non-waste development, local planning authorities should, to the extent appropriate to their responsibilities, ensure that:</p> <ul style="list-style-type: none"> the likely impact of proposed, non-waste related development on existing waste management facilities, and on sites and areas allocated for waste management, is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities.; new, non-waste development makes sufficient provision for waste management and promotes good design to secure the integration of waste management facilities with the rest of the development and, in less developed areas, with the local landscape. This includes providing adequate storage facilities at residential premises, for example by ensuring that there is sufficient and discrete provision for bins, to facilitate a high quality, comprehensive and frequent household collection service.; the handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities, and minimises off-site disposal. 		
<p>National and regional guidelines for aggregates provision in England 2005-2020, DCLG (2009)</p>	<p>Guidelines should be used in preparing and revising minerals LDFs and RSSs to inform provision of aggregates through the planning system in the English regions and for individual mineral planning authorities.</p> <p>Worcestershire falls within the West Midlands, for which the guidelines apportion 165 million tonnes of land-won sand & gravel and 82 million tonnes of land-won crushed rock, with assumptions of 100 million tonnes of alternative materials and 23 million tonnes of net imports to England. Further disaggregation to sub-regional areas is the responsibility of 'responsible regional authorities', taking into account advice from the mineral planning authorities (MPAs) and the regional aggregates working party (RAWP). The future of RAWPs is unclear at this stage.</p>	<p>MLP should be informed by liaison with other authorities in arriving at a Worcestershire apportionment of aggregates production.</p>	<p>Ensure material assets objective within SA framework.</p>
<p>Nature After Minerals: how mineral site restoration can benefit people and wildlife (2006)</p>	<p>Minerals sites have the potential to enhance biodiversity and to provide a public benefit at the end of their working lives through restoration. The potential contribution of the minerals industry to UK BAP targets is immense.</p> <p>Securing funding for long-term management will unlock many more opportunities by making nature conservation a more attractive option to landowners. Guidance must be provided to facilitate this through local planning policies (including for minerals) and a revised Mineral Planning Statement on reclamation of sites.</p> <p>Planning policies and site allocations should support habitat creation on mineral sites.</p>	<p>MLP should recognise and enable the value of minerals sites to nature and society. This applies especially to restoration, but could also explore opportunities for education in the operational phases. Opportunities relate to</p>	<p>Ensure biodiversity, geodiversity, material assets and access to services objectives within SA framework.</p>

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	<p>Appropriate habitat creation can be a solution to the identified problem of bird-strike. A risk assessment approach must be taken by safeguarding authorities and Mineral Planning Authorities.</p>	<p>biodiversity and geodiversity, as well as sport and recreation.</p> <p>Birmingham International Airport and any other relevant aviation interests should be consulted when developing restoration policies, in recognition of the increased potential of bird strikes.</p>	
<p>Securing the Future: UK Sustainable Development Strategy (2005)</p>	<p>Four broad objectives:</p> <ul style="list-style-type: none"> • Sustainable consumption and production – working towards achieving more with less. • Natural resource protection and environmental enhancement • From local to global, building sustainable communities • Climate change and energy <p>Our landscapes and seascapes are inseparable from our culture, bearing the imprints of generations of land use. Our physical and mental health is reliant on the quality of the environment. There must also be access to a variety of well-managed and maintained green spaces for leisure, sport, recreation and general public benefit to help people choose healthy lifestyles, in urban as well as rural areas.</p>	<p>MLP should embody sustainability principles, and recognise the valuable contribution that minerals sites can make to society, the economy and the environment, both during operational phases and following restoration.</p>	<p>The SA process is designed to ensure that sustainable development principles are fully considered in MLP preparation, and to help ensure the social, economic and environmental benefits are maximised.</p>
<p>A Strategy for England's Trees, Woods and Forests, DEFRA (2007)</p>	<p>Aims to provide a resource of trees, woods and forests where they can contribute environmental, economic and social benefits now and for future generations; to ensure that existing and newly planted trees, woods and forests are resilient to climate change and contribute to biodiversity and natural resources adjusting to a changing climate; to protect and enhance water, soil, air, biodiversity and landscape, and the cultural and amenity values of trees and woodland; to increase the contribution that trees, woods and forests make to quality of life; and to improve the competitiveness of woodland businesses and promote development of new/improved markets for sustainable woodland products and ecosystem services.</p> <p>It seeks to do this through the long-term sustainable management of trees, woods and forests; by seeking 'the right tree in the right place'; by effective use of public investment; and by ensuring synergies with other Government policies.</p>	<p>MLP should recognise the value of trees and policies should seek to avoid any loss where practicable through location and design policies. The potential contribution of trees in restoration schemes should be explored and maximised.</p>	<p>Ensure flora and fauna objective within SA framework.</p>

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DEFRA (2018) A Green Future: Our 25 Year Plan to Improve the Environment	Sets out goals for improving the environment within the next 25 years. It details how the Government will work with communities and businesses to leave the environment in a better state than it is presently.	Develop policies that encourage the protection and enhancement of the natural environment.	Include sustainability objective / appraisal question that relates to the protection and enhancement of the natural environment.
Mineral Extraction and the Historic Environment (2006)	<p>Historic England policy on mineral extraction and the historic environment reflects these aims under three headings:</p> <ul style="list-style-type: none"> • the historic significance of mining and quarrying sites and landscapes • the impacts on the historic environment that can be caused by mineral extraction together with advice on appropriate mitigation measures • the need for, and supply of natural stone and other materials required to conserve the historic environment and maintain local distinctiveness. <p>Survey and excavation have revolutionised our understanding of the past as a result of the minerals industry's compliance by with the requirements of Planning Policy Guidance notes 15 and 16. The environmental costs, however, can be considerable. In addition to the destructive impacts within the footprint of minerals extraction, the surface disposal of mineral waste can preclude appreciation of historic sites. Inappropriate restoration of former sites can also disfigure the historic character of the landscape and compromise the setting of ancient monuments. Noise, dust and the vibration caused by the regular passage of minerals-related heavy traffic can similarly damage the fabric of historic buildings and reduce opportunities for their enjoyment and appreciation.</p>	MLP should recognise the non-renewable nature of the historic environment and the variety of impacts that could arise as a result of minerals extraction. The historic environment should be fully considered through location and design policies and in terms of restoration.	Ensure historic environment objective within SA framework.
Mineral Extraction and Archaeology: A Practice Guide (2008)	<p>This document provides guidance specifically for dealing with archaeological remains as part of mineral development through the planning process. The principal purpose of this Practice Guide is to provide clear and practical guidance on the archaeological evaluation of mineral development sites, particularly for the determination of individual planning applications for minerals development. The guide also provides some information on the mitigation techniques that could be employed. The guide is based on five key principles:</p> <ul style="list-style-type: none"> • A steady, adequate and sustainable supply of minerals is essential to the nation's prosperity, infrastructure and quality of life. • Minerals are finite and irreplaceable resources that can only be worked where they occur. Proposals for the extraction of those resources will only proceed if the minerals operator considers the commercial risk acceptable. • Archaeological remains are a finite and irreplaceable resource that may occur anywhere. In many cases they are highly fragile and vulnerable to 	MLP should recognise the non-renewable nature of the historic environment and the variety of impacts that could arise as a result of minerals extraction. The historic environment should be fully considered through location and design policies and in terms of restoration.	Ensure historic environment objective within SA framework.

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for emerging Minerals Local Plan	Implications for the sustainability appraisal
	<p>damage and destruction.</p> <ul style="list-style-type: none"> • Archaeological resources are not all equal in value; those of international or national importance require the highest level of protection from competing development. Equally, few archaeological resources are without value and this can sometimes only be established by investigation. • It is the role of the planning system to reconcile the needs of the historic environment and minerals development in the context of sustainable development. 		

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Regional			
West Midlands Combined Authority Strategic Economic Plan (date not available)	<p>Objectives:</p> <ul style="list-style-type: none"> • Economic growth: To improve GVA for the region in line with the UK average • Employment and skills: To improve the balance between the skills that businesses need and the skills of local people so that they have the skills and qualifications to access jobs • Accessibility: To improve the connectivity of people and businesses to jobs and markets respectively. • Business competitiveness and productivity: To improve the productivity (GVA) of businesses, focusing on growth sectors. • Land: To improve the quantity of high quality, readily available development sites to high quality locations that meet housing and business needs. • Public sector reform: To secure better for less from public services, improve the life chances and the health and wellbeing of communities. • Health: Reduction in the health inequality gap within the population. The healthy life expectancy for men will be raised from the current WMCA average of 61.5 to national average of 62.3 and from 62.3 to 63.9 for women. • Housing: A greater and broader range of homes. • Environment: Improved competitiveness through energy and resource efficiency, stimulating new technology and business. 	MLP can help provide the right sites to allow the economic development of minerals. This in turn will allow the wider economy, especially construction, to prosper. Restoration of sites can provide opportunities for economic growth, especially in leisure and tourism.	Ensure economic growth objective within SA framework.
West Midlands Energy Strategy (2004)	<p>Vision: By 2020 we will have delivered the West Midlands’s commitment to the climate change challenge, having ensured a sustainable, secure and affordable supply of energy for everyone and strengthened the region’s economic capability.</p> <p>The strategy seeks to achieve:</p> <ul style="list-style-type: none"> • Improved energy efficiency • Increased use of renewable energy • Business benefiting from commercial opportunities • Focused and practical delivery • Landscape character and biodiversity considerations should be taken into 	MLP can help deliver energy minerals, and set a framework for the extraction of shale gas (which may not be economically available in Worcestershire). Policies should seek to ensure that operations are energy efficient through siting near to sustainable transport nodes where possible and requiring buildings to be energy	Ensure energy objective within SA framework.

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	account for all renewable energy prospects.	efficient.	
A Sustainable Future for the West Midlands: Regional Sustainable Development Framework (2006)	<p>The purpose of this report was to provide a framework of sustainable development principals and objectives to help people that develop, review and implement strategies, policies and plans in the West Midlands to ensure their work contributes towards a sustainable future for the region.</p> <p>The Principles are:</p> <ul style="list-style-type: none"> • Putting people and the community first • A holistic view • Whole-life costing • Living within our means • The Precautionary Principle • The perpetrator pays • Embracing diversity • Valuing the environment • Consideration beyond the region • Objectives • Developing thriving sustainable communities • Enhance and protect the environment • Ensure prudent and efficient use of natural resources • Develop a flourishing, diverse and stable regional economy 	MLP should embody sustainability principles, and recognise the valuable contribution that minerals sites can make to society, the economy and the environment, both during operational phases and following restoration.	The SA process is designed to ensure that sustainable development principles are fully considered in MLP preparation, and to help ensure the social, economic and environmental benefits are maximised.

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for emerging Minerals Local Plan	Implications for the sustainability appraisal
County			
Worcestershire Single Sustainable Community Strategy (2011)	<p>The SCS identifies three key priorities for Worcestershire:</p> <ol style="list-style-type: none"> 1. A skilled and prosperous economy 2. An environment that is cherished and resilient 3. Improving health & well-being. <p>Economic priority outcomes for the next ten years are:</p> <ol style="list-style-type: none"> A. Enhanced economic prosperity through sustainable economic growth B. Improved survival rates for new and existing business C. A skilled workforce that meets the needs of business. <p>Environmental priority outcomes for the next 10 years are:</p> <ol style="list-style-type: none"> A. Protecting and enhancing the county's natural and historic environment through a better understanding of its social and economic value and its contribution to health and well-being B. Working better together to deliver environmental improvements C. Mitigating and adapting to climate change. <p>Health and well-being priority outcomes for the next 10 years are:</p> <ol style="list-style-type: none"> A. To reduce health inequalities between social groups in terms of health and quality of life outcomes B. To improve the quality of life and independence of older people and those with a long-term illness C. To improve mental health and well-being. 	MLP can help deliver all three of the county-wide priorities, but will be of particular relevance in helping to achieve the economic and environmental priority outcomes. The MLP should foster a collaborative, partnership approach and should consult with sector experts when developing policies for restoration.	SA should include objectives and criteria relating to health, the economy and the environment.
Worcestershire Climate Change Strategy 2012-2020	<p>Sets the target to reduce climate change causing gas emissions across the County by a minimum of 30% from 2005 levels by 2020 and put in place measures to enable reduction by 80% by 2050 by:</p> <ul style="list-style-type: none"> • facilitating community level action to reduce carbon emissions 	MLP should be informed by the latest climate change predictions and should seek to guide development type and location so as to minimise additional CO ₂ emissions and to adapt to	Ensure climate change objective forms part of SA framework.

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	<ul style="list-style-type: none"> • delivering effective education and awareness raising programmes related to climate change • improving the energy efficiency of Worcestershire’s homes and stopping the growth of fuel poverty • utilising spatial planning processes to enable transition to a low carbon economy • helping to realise the county’s potential to harness the power of renewable energy, recognising the importance of public perception • developing smarter travel choices programmes, (including smarter use of ICT to help residents avoid travel), and facilitate use of alternatively fuelled vehicles • building a low carbon economy by working with private sector organisations through the Worcestershire LEP, focusing on resource efficiency, skills development, business opportunities, green jobs and best practice sharing • working together to implement Worcestershire organisations’ existing carbon management plans and encourage other organisations to take action too • enable the management of land to reduce carbon emissions, maximise natural carbon sinks and promote local food production • ensuring all key strategies and plans address carbon reduction 	<p>the consequences of climate change. This should include requirements for sustainable construction and for sites to take advantage of sustainable transport modes wherever possible. The role of restored minerals sites to act as a refuge for wildlife displaced by climate change should also be explored.</p>	
<p>Worcestershire Landscape Character Assessment Supplementary Guidance (2012)</p>	<p>The LCA SG seeks to explain the modern concepts of landscape and landscape character and to offer guidance in the application of Landscape Character Assessment (LCA). The advice offered is targeted at both planning and land management and will enable local communities to identify the landscape elements that contribute to local distinctiveness. It provides background information, sets landscape character within the planning framework and describes the processes of assessment and evaluation. It describes the Landscape Types which underlie landscape-based planning, along with a brief analysis of changing character trends and guidance for future management and development.</p> <p>Strategic objectives:</p> <ul style="list-style-type: none"> • Conserve and enhance the distinctive landscape elements and features identified in Landscape Character Assessments and Historic Landscape Characterisations, particularly those that are most sensitive or have little capacity for change. • Restore distinctive landscapes and landscape features that have been 	<p>MLP should include policies to ensure that the landscape impact of proposals is taken into account. It should ensure that landscape character assessment is used to assess potential impact, recognising that the landscape impact during development may only be temporary, and that the lasting landscape impact may not be realised until restoration is complete. The MLP should reference the LCA SG and direct applicants towards its</p>	<p>Ensure landscape objective within SA framework.</p>

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	<p>significantly degraded.</p> <ul style="list-style-type: none"> • Identify and promote opportunities for positive landscape change to landowners, managers, government and all those with an influence over land. • Undertake survey and research to better understand and monitor the condition, and rate of change, of landscape character within the framework of the Landscape Character Assessments and Historic Landscape Characterisation. • Seek resources to promote landscape management and improvements. • Promote greater awareness and appreciation of the landscape attributes and character of the AONB among residents and visitors, providing opportunities for them to be involved in identifying and conserving locally distinctive features, views and landscapes. <p>Potential development should be assessed against the LCA to enable both planning officers and developers to consider the landscape character potential for development and the most appropriate design treatment. Discussion at pre-application stage is also important.</p> <ul style="list-style-type: none"> • Development should be assessed by undertaking the following steps: • Identify the Landscape Type in which the site is located. • Assess whether the proposals conform to the Landscape Type's settlement pattern. Ideally, built development, particularly housing, should respect the inherent settlement pattern and avoid imposing an inappropriate pattern on the landscape. • Assess whether the site-specific character of the landscape conforms to the generic Landscape Types used in LCA. The Landscape Description Unit descriptions and the Land Cover Parcel data available online can aid in this assessment. If it is clear that the site in question is untypical, a different analysis should be made. • Other planning applications that do not constitute built development should consult the description of the relevant Landscape Type, in order to ensure that they are consistent with the relevant key characteristics. • Ensure that detailed proposals fully take into account all site features and that mitigation and enhancement measures, such as green infrastructure, conform to and strengthen the key characteristics of the landscape. 	assessment framework.	

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<p>Worcestershire Green Infrastructure Strategy 2013-2018</p>	<p>The Strategy is a non-statutory county-wide guidance document which aims to direct and drive the delivery of GI in Worcestershire and inform relevant strategies and plans of partner organisations over the next five years.</p> <p>The strategic objectives of the Green Infrastructure Strategy are to:</p> <ul style="list-style-type: none"> • Establish a framework of principles and priorities for green infrastructure in Worcestershire to meet the multiple integrated needs of business, the natural & historic environment and our communities. • Embed the benefits of green infrastructure and the services the environment provides in supporting the successful growth of Worcestershire's economy and the health and well-being of its communities. • Synthesise existing evidence to identify needs and opportunities to inform the future planning and management of green infrastructure in Worcestershire which complements wider networks beyond Worcestershire. • Drive the implementation, delivery and long-term maintenance of high-quality green infrastructure in the county and ensure that measures are in place by 2018 to deliver the vision. • Assist partners in aligning future delivery projects and their funding streams. <p>The main opportunities to plan, deliver and manage green infrastructure in the county will be from integrating green infrastructure priorities and principles into other proposals and decision-making processes. These include (inter alia) minerals extraction and restoration.</p> <p>The delivery of GI is likely to be an increasingly important consideration when assessing the extent to which proposals for housing, employment, mineral working, and infrastructure projects constitute sustainable development.</p>	<p>MLP has a key role to play in delivering green infrastructure. Due to the scale of opportunities presented by development and restoration, the MLP can guide minerals development to secure meaningful and large-scale green infrastructure gains for Worcestershire. Green infrastructure partners should be engaged throughout development of the MLP.</p>	<p>Ensure all elements of green infrastructure appear within the SA framework (integrating into a single objective would make appraisal more difficult).</p>
<p>Worcestershire Historic Landscape Characterisation (2012)</p>	<p>HLC seeks to identify the valued characteristics of the county's landscapes, whether it is field patterns, settlements or other elements, so that they can be effectively managed into the future, providing benefits for residents and visitors alike.</p> <p>The historic landscape is sensitive to change and needs to be properly understood before change is planned, to ensure its effective management and enhancement, so that it can make its full contribution in shaping sustainable communities.</p> <p>The broad objectives of the Worcestershire HLC project are:</p> <ul style="list-style-type: none"> • To improve understanding of the landscape in Worcestershire; 	<p>MLP should include policies to ensure that the historic landscape character of proposals is taken into account. This links strongly with the Landscape character Assessment above.</p>	<p>Ensure landscape and historic environment objectives within SA framework.</p>

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	<ul style="list-style-type: none"> • To provide a context for archaeological sites and monuments within the county; • To provide a framework for informed landscape management strategies; • To better inform spatial planning, development control, conservation issues and academic research; • To underpin historic environment advice given to district councils and other environment/ conservation agencies, such as Natural England and the Forestry Commission; • To monitor future changes within the historic environment; • To support and inform outreach and educational programmes in order to engage and inform the wider community about their local historic landscape; • To create a dynamic and versatile dataset that can be enhanced and updated to reflect changes in the historic environment; • To produce a dataset that is compatible with those of adjacent counties in order to inform regional and higher-level historic landscape characterisation. 		
<p>Archaeology and aggregates in Worcestershire: A resource assessment and research agenda (2007)</p>	<p>This project was undertaken to assess the archaeological resource of the aggregate producing areas of Worcestershire. It is intended to promote understanding of the archaeological resource and support the development and implementation of future mitigation strategies relating to aggregate extraction within the county.</p> <p>The assessment's objectives are:</p> <ul style="list-style-type: none"> • To produce detailed mapping and a written description of the aggregates resource in Worcestershire; • To identify the areas likely to be affected by future aggregate minerals extraction; • To incorporate the existing transcribed aerial photographic data (produced by RCHME) for the aggregate-producing areas into the Worcestershire HER; • To produce a resource assessment of the existing archaeological resource in the aggregate producing areas of Worcestershire; • To produce an initial archaeological research agenda for the aggregate areas, and identify areas where future data capture could answer the questions posed; • To assess current methodologies for archaeological evaluation, excavation, 	<p>The MLP should be informed by this project in its consideration of how minerals policies and sites could impact upon the historic environment.</p>	<p>Ensure historic environment objective within SA framework.</p>

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	<p>and mitigation;</p> <ul style="list-style-type: none"> To make available the information gathered to the archaeological community, the aggregates industry and the wider public. 		

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Other			
<p>Water for life and livelihoods, Part 1: Severn river basin district River basin management plan, DEFRA/EA (2016)</p>	<p>This plan focuses on the protection, improvement and sustainable use of the water environment.</p> <p>Environmental Objectives:</p> <ul style="list-style-type: none"> • to prevent deterioration of the status of surface waters and groundwater • to achieve objectives and standards for protected areas • to aim to achieve good status for all water bodies or, for heavily modified water bodies and artificial water bodies, good ecological potential and good surface water chemical status • to reverse any significant and sustained upward trends in pollutant concentrations in groundwater • the cessation of discharges, emissions and losses of priority hazardous substances into surface waters • progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants <p>Environmental objectives have been set for each of the protected areas and water bodies in the river basin district. They were identified through a process involving technical and economic appraisals and formal public consultation. Achieving the objectives will optimise the benefits to society from using the water environment. The environmental objectives summarised in this section are legally binding. All public bodies must have regard to these objectives when making decisions that could affect the quality of the water environment.</p> <p>Water body Objectives:</p> <p>For surface waters, objectives are set for ecological and chemical status. For artificial or heavily modified water bodies, objectives are set for ecological potential and chemical status. For groundwater, objectives are set for quantitative and chemical status</p> <p>The mining and quarrying sector has active operations in this river basin district. Past activity has left a legacy from historic mining and now, working with partners, the Environment Agency has an established Strategy for investigation and remediation of these sites.</p>	<p>MLP should recognise the impact that mineral operations can have on the water environment and should seek to ensure that protective policies are in place.</p>	<p>Water objective to be included within SA framework.</p>

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<p>River Severn Catchment Flood Management Plan Summary Report (2009)</p>	<p>Provides an overview of the flood risk in the River Severn catchment and sets out the Environment Agency's preferred plan for sustainable flood risk management over the next 50 to 100 years.</p> <p>Proposed actions in the Middle Severn Corridor:</p> <ul style="list-style-type: none"> • Ensure floodplains are not inappropriately developed. Follow the 'sequential approach' of PPS 25, and consider land swapping opportunities. • Encourage compatibility between urban open spaces, and their ability to make space for rivers to expand as flood flows occur. One example of a flood-compatible use is playing fields. Develop strategies to create 'blue corridors' by developing/redeveloping to link these flood-compatible spaces. • Encourage rural and urban best practices in land-use and in land-management to restore more sustainable natural floodplains and to reduce run-off. • Review how effective and sustainable each flood defence is. Review maintenance operations to ensure they are proportionate to flood risk. Focus efforts on protecting communities and making them more resilient to flooding. It should be noted that protecting large areas of agricultural land in the floodplain tends to increase flood risk for downstream communities. • Develop a better understanding of flooding from surface water, from drainage systems, and from 'non-main' watercourses. Produce a strategy for operation and investment, integrating all these with main rivers. • Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses. • Maintain flood warning systems and seek opportunities to improve effectiveness and coverage. • Seek ecological improvements. <p>Proposed actions in the Telford, Black Country, Bromsgrove, Kidderminster and Coventry Cluster:</p> <ul style="list-style-type: none"> • Ensure floodplains are not inappropriately developed. Follow the 'sequential approach' of PPS 25 and consider land swapping opportunities. • Encourage compatibility between urban open spaces and their ability to 	<p>The MLP should ensure that policies and site locations take flood risk and flood risk management into account.</p>	<p>Flooding objective to be included within SA framework.</p>

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	<p>make space for rivers to expand as flood flows occur. One example of a flood-compatible use is playing fields. Develop strategies to create 'blue corridors' by developing/redeveloping to link these flood-compatible spaces.</p> <ul style="list-style-type: none"> • Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses. • Develop better understanding of flooding from surface water, from drainage systems, and from 'non-main' watercourses. Produce a strategy for operation and investment, integrating all these with main rivers, particularly for Coventry and Leamington Spa. Local authorities to develop Surface Water Management Plans for the Bromsgrove, Droitwich and Kidderminster areas. Apply lessons from Integrated Urban Drainage pilot schemes, for example Telford & Wrekin. • Review how effective and sustainable each flood defence is. Review maintenance operations to ensure they are proportionate to flood risk. Manage fly-tipping [on floodplains and in channels.] Avoid excessive silt accumulation in artificial channels [Either by channel modifications or by de-silting.] Focus on bottlenecks. Watercourses in Coventry are covered by the Green Infrastructure & Green Space Strategy. • Maintain flood warning systems and explore opportunities to improve their effectiveness and coverage, with Coventry as a high priority for in-depth study. • Carry out an assessment of the scheme to canalise the River Salwarpe [around Droitwich etc.] in terms of flood risk. <p>Proposed actions in the Lower Severn Corridor & Leadon Catchment:</p> <ul style="list-style-type: none"> • Encourage rural and urban best practices in land-use and in land-management to restore more sustainable natural floodplains and to reduce run-off. • Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses. • Ensure floodplains are not inappropriately developed. Follow the 'sequential approach' of PPS 25, and consider land swapping opportunities. • Review how effective and sustainable flood defences are. Ensure that 		

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	<p>maintenance operations are proportionate to flood risk. In the Severn Corridor there are raised defences in the Chelt Basin that mainly protect agricultural land. These need to be reviewed to find out how effective they are and what impact they have downstream.</p> <ul style="list-style-type: none"> Seek opportunities to improve watercourses where it would benefit fisheries (especially salmon.) Consider the impact of flood risk management activities on SSSIs, for example Malthouse Farm Meadows. <p>Proposed actions in the Middle Avon, Tributaries, Arrow and Alne, Redditch, Rugby and Teme:</p> <ul style="list-style-type: none"> Encourage rural and urban best practices in land-use and in land-management to restore more sustainable natural floodplains and to reduce run-off. Ensure that the run-off from all proposed development is minimised. For example, SuDS must be encouraged and targeted within planning approvals. Encourage the retro-fitting of SuDS where surface water flooding is already a problem. Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses. Maintain flood warning systems and explore opportunities to improve their effectiveness and coverage. Ensure floodplains are not inappropriately developed. Follow the 'sequential approach' of PPS 25, and consider land swapping opportunities. Encourage compatibility between urban open spaces and their ability to make space for rivers to expand as flood flows occur. One example of a flood compatible use is playing fields. Appraise strategies to create 'blue corridors' by developing/redeveloping to link these flood-compatible spaces. Develop better understanding of flooding from surface water, from drainage systems, and from 'non-main' watercourses. Produce a strategy for operation and investment, integrating these with main rivers. Local authorities to develop Surface Water Management Plans for in and around Rugby. Support ecological improvements. Examples of this include Severn & Avon 		

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	<p>Wetlands Project; Natural England’s three fluvial SSSIs; Cotswold AONB.</p> <ul style="list-style-type: none"> Maintain flood warning systems and look for opportunities to improve their effectiveness and coverage. 		
Cotswolds AONB Management Plan (2018-2023)	<p>The primary purpose of AONB designation is to conserve and enhance the natural beauty of the area. The landscape of the AONB must be managed in ways that conserve and enhance landscape character, local distinctiveness, geology and geomorphology, historic features, habitats and biological diversity. A sustainable approach must be taken to all issues within the AONB, particularly in the development and management of its rural economy.</p> <p>By 2043, the Cotswolds AONB will be:</p> <ul style="list-style-type: none"> A distinctive, unique, accessible living landscape treasured for its diversity which is recognised by all for its wide open views, dry stone walls, intimate valleys, flower rich grasslands, ancient woodlands, dark skies, tranquillity, archaeology, historic and cultural heritage and distinctive Cotswold stone architecture. A thriving collaborative, pioneering, proactive place, sustained by the passions of residents, visitors and businesses alike, where communities and businesses value its special qualities. <p>Limestone gives the area unity. This can be seen in the underlying geology and in the stone used for buildings and dry stone walls throughout the Cotswolds.</p> <p>The implications of climate change for all activities must be addressed seeking to mitigate the causes of climate change by minimising the output of greenhouse gases; and at the same time taking action to adapt to the effects of climate change in ways that conserve and enhance the Cotswolds’ special qualities.</p> <p>It is important to increase people’s awareness, knowledge and understanding of the qualities of the AONB, and of the opportunities to enjoy and explore the area.</p> <p>Provision should be made for the quarrying of limestone, at an appropriate scale, in order provide building materials that help maintain and enhance local distinctiveness. Any such mineral sites should be required to demonstrate that they do not have any significant adverse effects on the special qualities of the AONB or integrity of existing wildlife sites. Developments should use an appropriate colour of limestone to reflect local distinctiveness.</p>	<p>MLP should recognise the impact minerals development can have on the Cotswolds AONB.</p> <p>MLP should give consideration to having policies stating that any extensions to existing or new quarries for crushed limestone in the AONB will only be permitted if in the national interest.</p> <p>MLP should promote use of secondary aggregates.</p> <p>MLP should make provision for a continuous supply of walling and building stone to maintain local distinctiveness, and should be informed by the 2003 study referred to. MLP should encourage small scale local quarries.</p>	Include SA objective relating to natural assets and landscape.
Cotswolds Conservation Board Position Statement: Minerals and Waste Planning (2006) (as	<p>Although the Position Statement refers to the previous edition of the AONB Management Plan, the principles remain valid to the MLP.</p> <p>The aim of the Plan with respect to minerals is to support the use of sustainable resources, involving a reducing demand within the Cotswolds AONB unless there is</p>	<p>MLP should recognise the impact minerals development can have on the Cotswolds AONB.</p> <p>MLP should give</p>	Include SA objective relating to natural assets and landscape.

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for EMERGING MINERALS LOCAL PLAN	Implications for the sustainability appraisal
amended)	<p>an overriding national need.</p> <p>The Board would therefore expect a Minerals and Waste Planning Authority to demonstrate that it has made very clear in negotiations regarding regional apportionment of minerals requirements that additional quarrying for crushed limestone has a considerable adverse impact on the designated landscape.</p> <p>The Board will be expecting a Minerals and Waste Planning Authority to demonstrate very clearly that any extensions to existing or new quarries for crushed limestone in the AONB are only to be permitted if in the national interest. The Board will wish to see the use of secondary aggregates promoted in Mineral Planning Documents.</p> <p>However, a continuous supply of walling and building stone, including stone roofing slates, is required to conserve and enhance the distinctive built environment of the Cotswolds.</p> <p>The character of stone varies considerably across the AONB, and local sources are required to maintain local distinctiveness. In 2003 the former Cotswolds AONB Partnership published a study "Local Distinctiveness and Landscape Change". This identified the reducing local supply of stone (other than crushed rock) as a threat to this locally distinct built environment. Supply of building stone is becoming more restricted to bigger quarries supplying larger areas. This is leading to a more uniform appearance of stone buildings than existed previously. The study suggests that a possible solution would be the formulation of mineral planning policies which encouraged small scale local quarries and discouraged the further expansion of the larger operations. A resurgence of the formerly widespread "delving" tradition, particularly for low grade walling stone, as part of land management is envisaged. An investigation of the potential for small scale mining for stone where this would be less harmful to the landscape is also suggested.</p> <p>The Board would therefore wish to see this matter explored in the Minerals Local Development Plan process. A copy of the study has been supplied to all Minerals and Waste Planning Authorities.</p> <p>The Objective of the Plan with respect to waste management is to encourage the most sustainable, effective, and efficient use of all natural resources, including supporting waste reduction and recycling.</p> <p>Therefore with regard to waste, the Board would not wish to see any expansion of existing or location of new facilities other than as set out in (b) above within the AONB. In addition to the adverse effect on the landscape, such facilities will also result in additional vehicle movements on rural roads resulting in an adverse effect on tranquillity. The Board would welcome in principle the opportunity to encourage waste reduction and recycling.</p>	<p>consideration to having policies stating that any extensions to existing or new quarries for crushed limestone in the AONB will only be permitted if in the national interest.</p> <p>MLP should promote use of secondary aggregates.</p> <p>MLP should make provision for a continuous supply of walling and building stone to maintain local distinctiveness, and should be informed by the 2003 study referred to. MLP should encourage small scale local quarries.</p>	
Malvern Hills AONB	Strategic objectives include:	MLP should consider the	Include SA objective

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for EMERGING MINERALS LOCAL PLAN	Implications for the sustainability appraisal
Management Plan 2014-2019	<ul style="list-style-type: none"> • Conserve and enhance the distinctive landscape elements and features of the AONB, particularly those that are most sensitive or have little capacity for change. • Implement appropriate adaptation and mitigation measures to address climate change. • Protect important geological and geomorphological sites. • Establish and maintain coherent and resilient ecological networks across the AONB and beyond. • Ensure that the benefits and services provided by the natural environment are understood and accurately valued by decision-makers at all levels. • Conserve and enhance the historic environment and cultural heritage of the AONB through appropriate funding, management and raising awareness. • Ensure that sustainable farming and forestry remain the primary means by which the distinctive landscapes of the AONB are managed. • Enable vibrant communities to grow sustainably by stimulating economic prosperity while conserving and enhancing the distinctive character of the area. • The distinctive character and natural beauty of the AONB will be fully reflected in the development and implementation of consistent statutory land use planning policy and guidance across the AONB, and in decision-making on planning applications for development. • To ensure the AONB is widely recognised and valued as a sustainable visitor destination, where local communities benefit, businesses prosper and the environment is well managed. • To reduce the impact of the private car whilst promoting a more sustainable approach to accessibility management. • The development and management of recreation in the AONB should respect the character of the area whilst meeting the needs of visitors for quiet informal recreation. • That residents and visitors value the special qualities of the AONB and understand the need to invest in their management. • To increase significantly public support, commitment and participation in conserving and enhancing the AONB through volunteering. 	<p>need to retain strict policies in relation to mineral extraction in the AONB. The MLP should consider the merits of providing for small-scale local extraction for heritage building purposes. The MLP should encourage the use of recycled or secondary minerals wherever possible.</p> <p>Consideration should also be given to the creation of permanent geodiversity exposures.</p>	<p>relating to natural assets and landscape.</p>

Document	Key objectives/targets/guidance relevant to the plan and the SA	Implications for EMERGING MINERALS LOCAL PLAN	Implications for the sustainability appraisal
	<p>Mineral extraction is largely non-existent in the AONB as it is effectively prohibited by mineral plan policies other than in exceptional circumstances. A lack of local building materials can make it difficult to restore characteristic features such as walls and buildings and to meet locally distinctive design standards in new developments.</p> <p>Insensitive development can lead to the direct loss of, or adverse effect on, geodiversity through the loss of designated sites or exposures. Sensitive development, on the other hand, can create temporary or even permanent exposures and features. At present little data is available on the extent of loss or damage to sites of geodiversity interest other than designated sites. Lost sites include part of Tank Quarry at the north end of the Malvern Hills (which has been used for landfill), and Brays Pit and Mathon Pit to the west of the hills.</p>		

Appendix 3

Baseline Data

Note that, throughout this Appendix, figures have been taken from the previous Scoping work undertaken by Worcestershire County Council, unless updates have been required.

Previous versions of the Sustainability Appraisal included data on a number of issues for which no role for the MLP was identified. As these were deemed not relevant to the MLP, they have been removed.

Landscape and Land Use

Percentage of Total New Homes Built on Brownfield Land

Key Data: DCGL (now MHCLG) has published provisional statistics showing that 56% of new residential addresses (including all conversions) in England were created on previously-developed land in 2016/17. MHCLG has also released data on annual figures for the number of house building starts per 1,000 households. Between 2015 and 2016, Worcestershire had 8.7 house building starts per 1,000 households. **Table A3.1** shows the residential address change (%) on previously developed land from 2013 to 2017 in Worcestershire.

Table A3.1: Percentage of residential development on previously developed land

Local Authority	Previously Developed Land Use: Residential (%) from 2013-2017
Bromsgrove	8
Malvern Hills	10
Redditch	4
Worcester City	20
Wychavon	3
Wyre Forest	8
Worcestershire	9
England	18

Likely evolution: It is difficult to predict future brownfield development, as for some Worcestershire districts (e.g. Kidderminster) there remain large areas of land for regeneration, but for other districts this can be more limited. As rates have been very high in recent years, the local authorities may arrive at a 'tipping point' whereby the majority of land has been redeveloped (although there will always be a certain amount of redevelopment). National changes to planning policy, including the removal of brownfield targets, are likely to see rates decline across the country.

Role of MLP: Minerals can only be extracted where they are found. Relative to some other types of developments, scope to direct development to specific brownfield locations will be limited. The nature of some mineral workings would make them unsuitable for many brownfield areas which are often surrounded by incompatible land uses, although there may be some potential for small-scale workings such as borrow pits on brownfield development sites. Whilst minerals development is often on Greenfield land, it differs from most other developments in that it is a temporary land use and in most cases workings will be restored back to Greenfield status on completion of restoration works. Most minerals sites also fall within the flood plain, which renders their potential for future development extremely limited.

Data sources:

Bromsgrove District Council Land Availability Housing April 2015

Malvern Hills District Council Housing Land Supply Monitor 2014/2015

Worcester City Council Housing Land Monitor 1st April 2014 to 31st March 2015

Wychavon District Council Housing Land Supply Monitor Position Statement as at April 2016

Borough of Redditch Local Development Framework Authority Monitoring Report 1 April 2014 - 31 March 2015

Wyre Forest District Council Housing Land Availability Report October 2016

MHCLG, Housebuilding starts per 1000 households, Open Data 2016

MHCLG, Land Use Change Statistics 2016-2017: Residential Address Based Change Tables

MHCLG, Land Use Change Statistics in England, 2016-2017

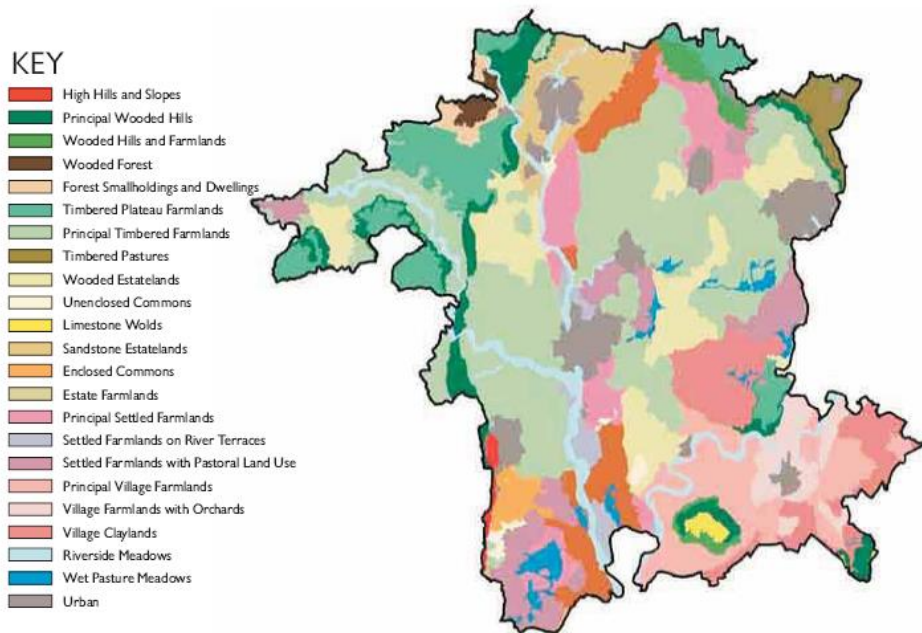
Condition of the Landscape

Key data: Worcestershire contains parts of two Areas of Outstanding Natural Beauty (the Cotswolds and the Malvern Hills). These nationally-designated landscapes account for approximately 5% of Worcestershire's land area and offer a valuable recreation and tourism resource.

A comprehensive landscape character assessment has been undertaken in Worcestershire. Landscape character assessment places the features of a particular landscape in context, providing not just a description of the different landscapes within the county, but an understanding as to why those differences and different landscapes are there and what they represent.

Some 22 Landscape Types have been identified in Worcestershire: High Hills and Slopes; Principal Wooded Hills; Wooded Hills and Farmlands; Wooded Forest; Forest Smallholdings and Dwellings; Timbered Pastures; Principal Timbered Farmlands; Timbered Plateau Farmlands; Wooded Estatelands; Limestone Estatelands; Sandstone Estatelands; Enclosed Commons; Estate Farmlands; Principal Settled Farmlands; Settled Farmlands with Pastoral Land Use; Settled Farmlands on River Terraces; Principal Village Farmlands; Village Farmlands with Orchards; Village Claylands; Riverside Meadows; Wet Pasture Meadows; and Unenclosed Commons.

Figure A3.1: Landscape Types in Worcestershire



Landscape type distribution

There are 23 Landscape Types in Worcestershire, when including the Urban Landscape Type (not included in the list above). Each of the above Landscape Types is made up of a number of smaller Landscape Description Units (LDUs). These LDUs, in turn, comprise many smaller-scale 'Land Cover Parcels' (LCPs). These LCPs are too small-scale to be meaningfully mapped here, but they have formed the basis of an assessment of the quality of the county's landscape.

In the baseline year (2005 aerial photograph set, assessed 2008) the percentage of landscape units (LCPs) in 'good' condition was 69%, 'moderate' was 27%, and 'poor' condition was 4%. The indicator excludes urban areas. This means that current status of the landscape character in Worcestershire is good. It has not been possible to update this indicator as of September 2018, due to an absence of up-to-date aerial photographs.

As yet, no other West Midlands counties have undertaken or published condition and sensitivity analyses, and no national data has been identified. Some protected landscapes undertake fixed-point photographic surveys at regular intervals to monitor landscape change, but this is not comparable with the Worcestershire assessment. Expert interpretation of the baseline data by landscape officers has confirmed that Worcestershire's landscape is in good condition.

Likely evolution: The likely evolution of the landscape is dependent on a wide range of factors, including development planning and development control decision-making. Specific proposals could undermine landscape quality through eroding character if designs fail to respond to their landscape context in a sensitive manner through scale, massing, etc.

Role of MLP: The MLP has a major role to play in helping to ensure that landscape is conserved and enhanced. The impact of minerals development on landscape can be significant, and there is potential for serious detriment. It is recognised that the impacts of minerals development will change over time, and whilst some harm could be experienced during operational phases, site restoration has the potential to create high-quality landscapes.

A wide range of support, guidance, and self-administered online checklists exist to ensure that landscape can be fully considered in development proposals from the earliest stage. The MLP could help to ensure the benefits afforded by this resource are maximised by

signposting to the data/toolkits, and ensuring landscape considerations are fully integrated into policies.

Data sources:

Worcestershire Local Nature Partnership, State of the Environment Report

Worcestershire Landscape Character Assessment and Mapping Portal

Landscape Character Assessment, Supplementary Guidance, Technical Handbook, August 2013

Planted ancient woodland sites restored to native woodland (PAWS)

Key data: Britain is the second least wooded country in the EU, with Worcestershire as a county slightly below the national average for woodland cover. Much of what remains is in the northwest of the county, focused on the Wyre Forest. The percentage of land with biologically rich semi-natural ancient woodland in the county is just 2.5%. There are currently 14,163 ha of PAWS in the West England Forest District (the Forestry Commission's management unit that stretches from Cornwall to Shropshire, and which includes all of Worcestershire).

Conservation objectives for PAWS, from the Worcestershire Biodiversity Draft Action Plan (2018), include 'restoration of PAWS woodland to a more semi-natural vegetative cover' and 'take opportunities to re-link fragmented PAWS and ancient woodland sites.'

Worcestershire Wildlife Trust completed a comprehensive review of the county's woodland Local Wildlife Sites (LWS) in 2009. The Worcestershire Local Sites Partnership continues to monitor all LWS and any new woodland sites that qualify for inclusion in the list will be considered by the Partnership's selection panel. Data is sourced from academic reports, Forestry Commission (FC), Woodland Trust and DEFRA.

Previously, in March 2010 the area of woodland under PAWS in Worcestershire was 2,649ha. FC estate restoration amounted to 290ha, and private woodland 41.08ha. In the year to March 2012 there was continued phased restoration on the public forest estate. There were a number of areas of private woodland PAWS that were restored in Worcestershire from 2010 to 2012, totalling approximately 9.54ha.

Traditional ways of managing woodlands, such as coppicing, declined significantly as demand for wood for tools and crafts fell. As a result, many woodlands have either been left unmanaged or managed for timber. This has led to structural change within the wood, a lack of trees at different stages of growth and a lack of opportunities for animals to thrive. Past data from 2012 notes that many woodlands in Worcestershire are currently unmanaged, under-utilised, neglected and damaged. Only 3.6% of the county area is AWS, with 2.5% ASNW and 1.1% replanted.

Likely evolution: The likely direction of performance is unclear at this stage. With the upcoming 2018 Biodiversity Action Plan, policies will hopefully be put into place that better manage PAWS, re-link PAWS with other Ancient woodland sites and restore PAWS. Since the percentage of poorly managed woodlands is very low this is likely to remain low.

Role of MLP: The MLP can play a role in ensuring that ancient woodland, which forms a key part of the Worcestershire landscape, is conserved and enhanced through guiding development. Minerals restoration policies could also make provision for new woodland or the restoration of degraded ancient woodland, either on-site or elsewhere.

Data sources:

Woodland Habitat Action Plan (Part of the Draft Biodiversity Action Plan), 2018

Worcestershire Wildlife Trust, Woodlands <http://www.worcswildlifetrust.co.uk/woodlands>

West England Forest District 2013-2020

Biodiversity and Geography

Condition of European nature sites

Key data: **Table A3.2** lists European sites in Worcestershire and details the qualifying features, conservation objectives and condition of each site (information sourced from Natural England's website).

Table A3.2: Conservation objectives of European sites

European Site	Conservation Objectives (summarised)	Favourable Condition Comment
Lyppard Grange Ponds SAC	<p>Qualifying features: Triturus cristatus; Great crested newt</p> <p>Conservation Objectives: Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	Favourable
Bredon Hill SAC	<p>Qualifying features: Limoniscus violaceus; Violet click beetle</p> <p>Conservation Objectives: Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	Favourable
Dixton Wood SAC	<p>Qualifying features: Limoniscus violaceus; Violet click beetle</p> <p>Conservation Objectives: Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	Unfavourable
Fens Pools	<p>Qualifying features:</p>	Favourable

European Site	Conservation Objectives (summarised)	Favourable Condition Comment
SAC	<p>Triturus cristatus; Great crested newt</p> <p>Conservation Objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of qualifying species • The structure and function of the habitats of qualifying species • The supporting processes on which the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	
River Wye/ Afon Gwy SAC	<p>Qualifying Features:</p> <p>Water courses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation; Rivers with floating vegetation often dominated by water-crowfoot</p> <p>Transition mires and quaking bogs; very wet mires often identified by an unstable 'quaking' surface</p> <p>Austropotamobius pallipes; White-clawed (or Atlantic stream) crayfish</p> <p>Petromyzon marinus: Sea lamprey</p> <p>Lampetra planeri; Brook lamprey</p> <p>Lampetra fluviatilis; River lamprey</p> <p>Alosa alosa; Allis shad</p> <p>Alosa fallax; Twaite shad</p> <p>Salmo salar; Atlantic salmon</p> <p>Cottus gobio; Bullhead</p> <p>Lutra lutra; Otter</p> <p>Conservation Objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	Unfavourable (recovering)
Downton Gorge SAC	<p>Qualifying Features:</p> <p>Tilio-Acerion forests of slopes, screes and ravines; mixed woodland on base-rich soils associated with rocky slopes</p> <p>Conservation Objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by</p>	Unfavourable (declining)

European Site	Conservation Objectives (summarised)	Favourable Condition Comment
	<p>maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site. 	
Walmore Common SPA	<p>Qualifying Features: Cygnus columbianus bewickii, Bewick's Swan</p> <p>Conservation Objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site. 	Unfavourable (no change)
Walmore Common Ramsar	<p>Internationally important bird assemblage of Cygnus columbianus bewickii</p> <ul style="list-style-type: none"> • No significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline. • Maintain no less than 43 individuals, representing an average of 0.5% of the GB population (i.e. 5 year peak mean 1998/9-2002/3) 	Unfavourable
Severn Estuary SAC	<p>Qualifying Features: Cygnus columbianus bewickii; Bewick's swan Tadorna tadorna; Common shelduck Anas strepera; Gadwall Calidris alpina; Dunlin Tringa tetanus; Common redshank Anser albifrons; Greater white-fronted goose</p> <p>Conservation Objectives:</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features • The structure and function of the habitats of the qualifying features • The supporting processes on which the habitats of the qualifying features rely 	Favourable

European Site	Conservation Objectives (summarised)	Favourable Condition Comment
	<ul style="list-style-type: none"> • The population of each of the qualifying features, and, • The distribution of the qualifying features within the site. 	
Severn Estuary SPA	<p>The site is of importance during the spring and autumn migration periods for waders, as well as in winter for a large numbers of waterbirds, especially swans, ducks and waders. The fish fauna is very diverse with more than 110 species identified. The site is of particular importance for migratory fish.</p> <p>There has been no significant reduction in numbers or displacement of wintering birds attributable to disturbance from an established baseline. Significant disturbances attributable to human activities can result in reduced food intake and/or increased energy expenditure.</p> <p>“Supporting habitats” are identified which describe the key habitats within the European marine site necessary to support the interest features i.e. the qualifying bird species. The “favourable condition table” contains further detail on habitat conditions. Supporting habitats:</p> <ul style="list-style-type: none"> • intertidal mudflats and sandflats (Annex 1 species, migratory species and waterfowl assemblages); • saltmarsh communities (Annex 1 species, migratory species and waterfowl assemblages); and • shingle and rocky shore (migratory species and waterfowl assemblages). 	Favourable
Severn Estuary Ramsar	<p>Target number of Annex II species:</p> <p>Dunlin - >41,683;</p> <p>Shelduck>2,892;</p> <p>Redshank>2,013; (i.e. the 5 year peak mean between 1988/9 – 1992/3).</p> <p>Objective:</p> <p>To maintain in a favourable condition the habitats for the internationally important assemblages of waterfowl listed, in particular:</p> <ul style="list-style-type: none"> • saltmarsh - Upper and lower saltmarsh provide important feeding and roosting areas. The European white-fronted geese graze on a range of saltmarsh grasses and herbs. The birds feed on the saltmarsh and the transition to coastal grazing marsh in front of the sea defences in the upper estuary. • mudflats and sandflats; and • coastal lagoons. 	Favourable

Table A3.3 lists the key sensitivities of each European site, which are grouped by habitat.

Table A3.3: Key sensitivities of European sites

Habitat Type and Species Associated European Site	Key Sensitivities represented across the European sites by habitat type (assuming no direct habitat loss)
<u>Ponds and Pools</u> <ul style="list-style-type: none"> • Lyppard Grange Ponds SAC – Great Crested Newt • Fens Pools SAC – Great Crested Newt 	<ul style="list-style-type: none"> • Water quality - eutrophication is a threat, particularly from point source pollution (e.g. sewage outfalls) but also from surface runoff or groundwater pollution and atmospheric deposition • Water levels – a high and stable water table is fundamental. • Siltation (e.g. excessive poaching of lake margins by stock, suspended sediments leading to transport of nutrients) • Scrub or tree encroachment (leading to shading, nutrient and hydrological effects) • Maintenance of appropriate grazing regime • Spread of introduced non-native species • Recreational pressure / disturbance (particularly on-water activities with potential to disturb sediment and increase turbidity in lakes) • Development pressure • Diffuse air pollution from traffic and agriculture.
<u>Woodland</u> <ul style="list-style-type: none"> • Bredon Hill SAC • Dixton Wood SAC • Downton Gorge SAC 	<ul style="list-style-type: none"> • Water quality – e.g. pollution through groundwater and surface run-off sources • Water level – maintenance of water table essential e.g. restrict new drainage ditches around wet woodlands • Maintenance of appropriate grazing regime • Heavy recreational pressure • Spread of non-native / invasive species • Scrub encroachment • Atmospheric pollution (nutrient deposition and acidification) • Development pressure • Climate change • Disease • Insufficient forestry and woodland management

Habitat Type and Species Associated European Site	Key Sensitivities represented across the European sites by habitat type (assuming no direct habitat loss)
<u>Rivers</u> • River Wye / Afon Gwy SAC • Severn Estuary SAC	<ul style="list-style-type: none"> • Water quality – pollution through agricultural run-off and sewage outputs is a problem • Flow (flow regime should be characteristic of the river). Abstraction should be regulated. • Suspended sediments/siltation – through intensification of agricultural practices and other disturbance e.g. soil degradation around stock feeding points. • Inappropriate dredging • Recreational pressure and disturbance – can lead to disturbance, damage and increases in suspended sediment e.g. footpath erosion, water-based activities • Atmospheric pollution - deposition of oxides of nitrogen & sulphur, acidification of river water (deposition of nitrogen & ammonia) • Climate change - change in rainfall patterns and transpiration rates, including temperature – more algal blooms, reduced summer flow. Including high rainfall – more erosive runoff and sedimentation. • Illegal fish poaching • Spread of introduced non-native species • Artificial barriers to fish migration • Impacts of development
<u>Wet Grassland</u> • Walmore Common SPA and Ramsar	<ul style="list-style-type: none"> • Maintenance of appropriate grazing regime • Water level – maintenance of hydrological regime (grassland communities are strongly influenced by the quantity and base status of the groundwater) • Water quality – nutrient enrichment from fertiliser run-off etc • Scrub encroachment (often due to undergrazing) • Development pressure • Spread of introduced non-native species • Human disturbance (off-road vehicles, burning (vandalism)) • Atmospheric pollution e.g. nitrous oxides from vehicle exhausts.
<u>Estuarine Habitats</u> • Severn Estuary SAC/SPA/ Ramsar	<ul style="list-style-type: none"> • Water quality – pollution • Recreational/tourism disturbance • Development e.g. dock/harbour creation, coastal defence works, energy production • Erosion • Siltation • Dredging • Over-fishing • Maintenance of appropriate grazing regime • Spread of non-native species • Disturbance to bird feeding and roosting habitat (noise / visual) • Change in land management

Likely evolution: Those with declining condition are likely to continue declining without intervention. The strength of existing planning controls should help ensure that conflicting land use that compromises site integrity is minimised in all but a minority of cases.

Role of MLP: The extraction and movement of minerals has the potential to impact negatively on European sites. The MLP can help to ensure that no significant effects arise from minerals operations through providing policies on location and operation, including the safeguarding of European sites. A draft Habitats Regulation Assessment (HRA) Record of Assessment (October 2018) concluded that the Fourth Stage MLP is not expected to lead to likely significant effects on International Sites either alone or in combination with those arising from another plan or project. However, the HRA also noted that an HRA will be required for the Mineral Site Allocations Plan and states that, "this Assessment does not remove the need for later Habitats Regulations Assessment of subservient plans, projects, or permissions associated with, or arising out of the MLP; acceptance that the MLP is consistent, so far as can be ascertained, with the Habitats Regulations does not guarantee that any plan or project derived from the Plan will also be found consistent".

Data sources:

Worcestershire County Council Minerals Local Plan draft Habitats Regulation Assessment Record of Assessment – Fourth Stage Consultation (October 2018)

Natural England, Conservation Objectives for European Sites: (South West- Various Sites), 2014-2015

Natural England, Site Improvement Plans: (South West- Various Sites) 2014-2015

Natural England website: designated site details, available at:

<https://designatedsites.naturalengland.org.uk/>

Condition of SSSIs

Key data: There has been a steady increase in the proportion of SSSIs within the county in 'favourable' or 'unfavourable recovering' (i.e. returning to favourable) condition. In the past few years, there has been a very slight decrease in the overall proportion of sites meeting either 'favourable' or 'unfavourable recovering' standard, down from 93.21% in 2013, to 92.85% in 2014 and 91.75% in 2015. This has since reversed, with the latest data, from 2018, showing that 95.49% of selected sites now meet these standards.

Natural England's standard framework, known as 'Common Standards Monitoring' requires assessment at least every six years. The indicator assesses the number of SSSI in each category, not the total area of SSSI within each category.

Table A3.4: Condition of SSSIs in Worcestershire, by area

Condition at 03 Feb 2018	Area (ha)	Percentage of total area of units assessed
Favourable	1975	55.9%
Unfavourable Recovering	1401	39.6%
Unfavourable No Change	55	1.6%
Unfavourable Declining	98	2.8%
Part Destroyed	3	0.1%
Destroyed	3	0.1%
Total area of units assessed (ha)	3,535	100%

A high-level analysis of Worcestershire's neighbouring areas demonstrates that the proportion of SSSIs in 'favourable' or 'unfavourable recovering' condition in Worcestershire is better than the overall average across the wider area.

Table A3.5: SSSIs in favourable or unfavourable recovering status in Worcestershire and the surrounding area

Area	Total area of SSSIs assessed	Area of assessed SSSI units in 'favourable' or 'unfavourable recovering' condition	Proportion of SSSIs in 'favourable' or 'unfavourable recovering' condition
Warwickshire	1,352	1,328	98.2%
Gloucestershire	13,072	12,368	94.6%
Shropshire	7,268	6,980	96.0%
Worcestershire	3,535	3,375	95.5%
Staffordshire	8,645	7,668	88.7%
Herefordshire	4,990	3,895	78.1%
West Midlands	1,188	554	46.7%
Total/Average	40,050	36,168	90.3%

'Unfavourable recovering' status means that such SSSIs do not meet the standard to be classed as 'favourable', but are under management regimes that should allow this status to be reached. Condition statistics are derived from ongoing monitoring of all Worcestershire's SSSI units, undertaken by Natural England under a rolling six-year programme.

Likely evolution: The condition of SSSIs has improved significantly over recent years'. Changes to the Common Agricultural Policy and other funding schemes (following Brexit) could lead to further changes in SSSI condition.

Role of MLP: Through guiding development to help conserve and enhance SSSIs, the MLP can contribute to biodiversity goals. Indeed, the BIS report on the impact of mining and quarrying referred to below states that despite its poor record in the past, the industry now makes an overall positive contribution to biodiversity and geodiversity which is disproportionate to its land take. This is illustrated by the large number of Sites of Special Scientific Interest and Natura 2000 sites linked to past and current mineral extraction. Opportunities afforded by site restoration should seek to maximise biodiversity and where appropriate create or enhance features of geodiversity importance.

Data sources:

Natural England county level reports online: condition of SSSI units

BIS: Digging the backyard: Mining and quarrying in the UK and their impact on future land use, Land Use Policy Journal, 2009

Management Status of Local Sites

Key data: The Worcestershire Local Sites Partnership comprises the seven local authorities, Worcestershire Wildlife Trust, Earth Heritage Trust, Worcestershire Biological Records Centre, Natural England, Forestry Commission, Environment Agency, Kemerton Conservation Trust, Farming and Wildlife Advisory Group, Country Land and Business Association and the National Farmers Union. The Partnership currently meets twice a year.

The Partnership is responsible for approving any new sites put forward for listing as county Local Sites and then ensuring the endorsement/adoption of those sites by their own organisations.

In the past the Partnership has monitored the proportion of Local Sites where positive conservation management is being implemented. Positive conservation management is management that contributes to maintaining or enhancing the features of interest for which a site has been selected. This indicator does not measure the actual condition of local sites

(Special Wildlife Sites and Local Geological Sites), but rather assesses which of the sites are under management regimes appropriate for the retention of site designation. It can be reasonably inferred that a site under a favourable management regime will be in better condition than one that is not (although there will be isolated exceptions to this). The management of Local Sites is key to achieving biodiversity targets with biodiversity being ultimately lost or conserved at the local level.

In Worcestershire, the most recent data shows condition of local sites to be poor, as only 31% of the total combined sites were rated as being under appropriate management. It should be noted that this data is from 2010, and no more recent updates are available as local authorities are no longer required to report against a national indicator that was set by the government.

The table below displays the number of biodiversity sites and local and regional geological sites within the county and each local authority. The last column for both shows the percentage of those sites that are meeting the requirements of positive conservation management. It should be noted that this data is from 2010, and no more recent updates are available.

Table A3.6: Scoring of Biodiversity Sites and Local Geological Sites within Worcestershire

	Biodiversity only		LGS only		
	Total no. bio sites in district	Indicator for % bio only	Total no. LGS in district	No. RIGS scoring	Indicator for RIGS only %
Bromsgrove	79	21.5	5	4	80.0
Malvern Hills	183	24.6	63	25	39.7
Redditch	22	36.4	0	0	0.0
Worcester City	9	77.8	0	0	0.0
Wychavon	123	35.8	16	5	31.3
Wyre Forest	45	31.1	8	3	37.5
County totals	461	29.3	92	37	40.2

Figures correct as of May 2010.

Likely evolution: The proportion of sites under appropriate management has seen a slight increase of 4.9% since the previous assessment, although this is mainly due to survey work to find out about the status of the sites, rather than actual changes in site management. It is unclear whether this improvement will continue.

Role of MLP: Through requiring development proposals to take account of local biodiversity and geodiversity sites, the MLP could seek to protect and conserve these assets. The location of minerals sites can also be guided to help minimise disturbance to these sites. The MLP could have a positive impact on geodiversity by opening up new sites which could ultimately become additional Local Geological Sites (LGSs). Policies could also make provision for both designated and non-designated geodiversity to be opened up for educational and recreational benefit where appropriate, to form a lasting legacy of value to naturalists and the wider public. The opportunities afforded by site restoration should seek to maximise biodiversity.

Data sources:

Worcestershire Local Nature Partnership, State of the Environment Report

Worcestershire Local Sites Partnership, What is a local site?, http://www.worcestershire.gov.uk/info/20014/planning/1025/worcestershire_local_sites_partnership

Natural England, South East England Biodiversity Forum, National Indicator 197

Key Breeding Birds Population Numbers

Key data: The status of wild bird populations is considered an important indicator of the overall health of the natural environment, as birds occupy all habitats and are near the top of the food chain. This indicator comprises population data for three species, which between them display a variety of habitat preferences. For the countryside to be in good health all habitats need to be doing well - if one component is failing, the general health of the countryside cannot be considered as good. Performance of this indicator is therefore based on the species performing least well. Latest results (2010/11) show that two of the three species (bullfinch and skylark) are declining, whilst thrush has shown a small increase.

Status is defined by comparing the most recent 5 year average frequency of occurrence with the 1994-98 five year average, which is used as a baseline.

Table A3.7: Change in key breeding birds populations over 5 year time periods (indicator status)

Species	1994 - 1998 5 yr average	2006-2010 5 yr average	Change (no.)	Change (%)	Indicator status
Song thrush	84.3	90.5	6.2	7.31	Amber
Skylark	72.8	63.9	-8.9	-12.2	Red
Bullfinch	44.3	23.9	-20.4	-46	Red

A percentage change +/- 10% is the chosen threshold for a population status change assessment.

Performance of this indicator is based on the species which is performing least well. The latest 2010/11 data show that two of the three species are declining. Direction of travel is indicated by the magnitude and direction of the percentage change between the latest 5-yr average and the preceding 5-yr average.

Table A3.8: Change in key breeding birds populations over 5 year time periods (direction of travel)

Species	2000-2004 5 year average	2006-2010 5 year average	Change (no)	Change (%)	Direction of travel
Song thrush	93.7	90.5	-3.2	-3.4	↓
Skylark	69.2	63.9	-5.3	-7.65	↓
Bullfinch	32.4	23.9	-8.5	-26.15	↓

A percentage change of +/- 5% is the chosen threshold for a population trend change assessment.

A national comparator to the Worcestershire data is the Populations of selected species (birds) indicator, which includes trends relating to breeding farmland and woodland birds. The latest data (UK Biodiversity Indicators 2017) describes farmland birds to have increased in 2015 (the latest assessment year) and woodland birds have had no change in numbers. The Worcestershire results broadly reflect the national picture, in that the species more dependent on farmland features (skylark and bullfinch) are declining, whereas song thrush, which has a broader range of habitat preferences, has a stable population. It should be noted that the Worcestershire data is from 2010/11, and no more recent updates are available.

Likely evolution: The song thrush, a generalist species of towns, gardens and wooded habitats, is doing well, as its basic habitat requirements are maintained.

The skylark, a bird of arable land and locally, unenclosed grasslands and commons, has previously shown an increase in population numbers, but now appears to be declining. The increase had been attributable to the habitat provided by arable set-aside and the considerable investment in farmland bird conservation practices through local uptake of agri-environment schemes (although research has not been undertaken to prove this). Winter survival rates, which have already been reduced by the change from spring to autumn cereal sowing, may have been further impacted by the colder winters of 2009/10 and 2010/11. The onus is on farmers, their representative bodies, Natural England and Defra to take effective measures to offset further population declines.

The bullfinch, a specialist of woodland edges, mature scrub and thick hedgerows, has been in long-term decline, with indications of a recent levelling off. Contributory factors are likely to be the harsh management of wood edges and hedgerows, including the replacement of tall and thick hedges with short flailed hedges, and the decline in traditional orchards.

Role of MLP: The MLP has a role to play in guiding development to minimise the risk to breeding bird populations and their habitats. Restoration policies should take into account the potential for beneficial gains resulting from sensitive landscape and habitat creation.

Data sources:

Worcestershire Local Nature Partnership State of the Environment Report

Joint Nature Conservation Committee, UK Biodiversity Indicators 2017

Cultural Heritage, Architecture and Archaeology

Heritage assets at risk in Worcestershire

Key data A total of 49 designated heritage assets, including listed buildings and scheduled ancient monuments, were considered to be 'at risk' in Worcestershire in 2017.

Table A3.9: Number of designated heritage assets 'at risk'

	2012	2013	2014	2015	2016	2017
Bromsgrove	10	10	10	9	8	7
Malvern Hills	7	6	11	15	12	13
Redditch	0	0	1	1	2	2
Worcester City	6	6	4	4	4	4
Wychavon	18	18	23	24	20	17
Wyre Forest	3	3	3	3	3	6
Worcestershire	44	43	52	56	49	49
West Midlands	443	424	436	450	430	416

Table A3.10: Breakdown of designated heritage assets at risk, 2017

	Building and structure entries	Place of worship entries	Archaeology entries	Park and garden entries	Battle-field entries	Conservation area entries
Bromsgrove	1	4	0	1	0	1
Malvern Hills	3	5	3	1	0	1
Redditch	0	0	2	0	0	0
Worcester	2	1	0	0	0	1
Wychavon	5	5	6	1	0	0
Wyre Forest	3	0	0	0	0	3

In the West Midlands, in 2017, there were 85 Grade I and II* listed buildings at risk (4.4% of the total). This is an increase in percentage of assets at risk from 2011 when the West Midlands had 4% of the total. The percentage of assets at risk is the same as 2010 (4.4%) and just below 2009(4.5%).

As of 2017, there were 165 Scheduled Monuments at risk (11.7%). This is a decrease in assets at risk from 2011 (16% of the total, 2010 (17%) and 2009 (20%). There has been a steady decrease since 2009. In 2017, there were only 8 Registered Parks and Gardens at risk (5.2% of the West Midlands total). This is a decrease from 2011 (6.7% of the total), which was also the same for 2010 and an improvement from 2009 (7.3%).

Nationally, Historic England data shows that the percentage of Grade I and II* buildings at risk in 2017 was 3.8%, an increase from 3.0% in 2011. The percentage of scheduled monuments at risk in 2017 was 12.5% (a decrease from 16.9% in 2011). The percentage of registered parks and gardens at risk in 2017 was 5.8%, a decrease from 6.4% in 2011.

Likely evolution: Since 2011, the percentage of Grade I and II* listed buildings classified as being 'at risk' has increased. It is possible that the percentage will continue to increase without intervention.

Role of MLP: The MLP can help prevent listed buildings, ancient monuments and historic parks and gardens from becoming at risk through policies to ensure that minerals sites do not compromise these assets, which could lead to a decline in their management (for example, mineral workings too close to a listed building could see the occupier withdrawing, leaving the building to fall into decline).

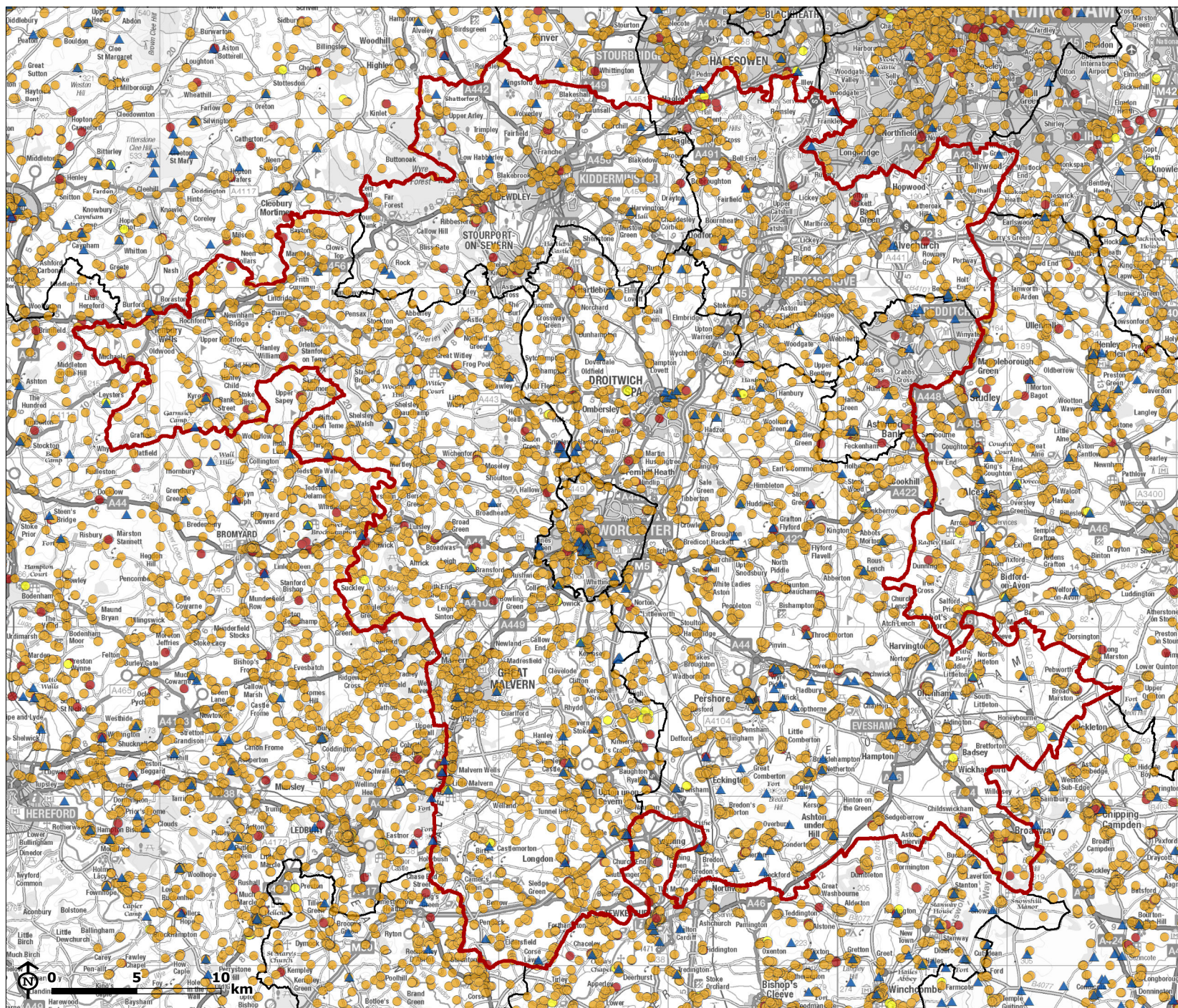
The greatest role for the MLP may be in ensuring sufficient building stone/brick clay is available to provide for repairs to historic buildings, many of which will need to be maintained in the local vernacular style. This may require small-scale workings to be available, or for stocks of materials to be kept, to allow for small-scale repairs as and when needed.

Data sources: Historic England, Heritage at Risk West Midlands Register 2017

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Figure A3.2: Distribution of Listed Buildings and Scheduled Ancient Monuments in Worcestershire

- Worcestershire County
- Surrounding local authorities
- ▲ Scheduled ancient monument
- Listed building**
 - Grade I
 - Grade II
 - Grade II*



Source: HE, OS

Map Scale @ A4: 1:320,000



Proportion of undesignated heritage assets at risk

Key data: There are around 60,000 known undesignated heritage assets in the county. Worcestershire Archive and Archaeology Service (WAAS) developed the Heritage at Risk Monitoring (HARM) project to monitor risk and change to a range of these historic environment features across the county. This framework closely follows the methodology of English Heritage's own Heritage at Risk initiative. The HARM indicator will give a broader and more accurate picture of the state of the historic environment than analysis of designated assets alone can provide.

Eight sample areas were selected (as below) to ensure a representative range of monument and landscape settings in rural, urban and peri-urban locations across Worcestershire. The sample areas do not change from year to year.

Figure A3.3: Worcestershire's Undesignated Heritage at Risk Monitoring Areas

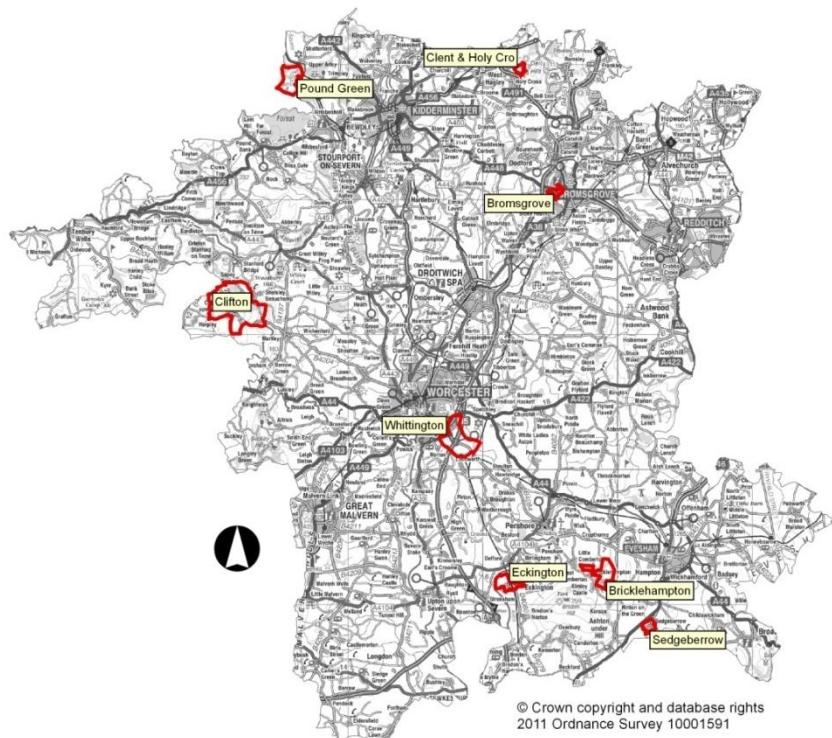


Table A3.11: The condition of the 71 Heritage Assets assessed

	Good	Intermediate	Poor
2017	45%	38%	16%
2015	46%	38%	15%

The majority of sample assets are in either 'good' or 'intermediate' condition. Thirteen heritage assets were deemed to be deteriorating (four of which were already in poor condition and considered high risk). Seven were in 'intermediate' condition and are still considered in intermediate condition as the deterioration is minor.

In terms of risk, 18% of heritage assets were considered to be high risk, 62% at medium risk and 20% at low risk. This is a deterioration from 2011, when 16% of assets were considered to be high risk, 57% at medium risk and 27% at low risk. The high risk examples fall into two categories:

- buildings not protected in any form (e.g. within a Conservation Area) with no current function or in a state of disrepair;

- cropmarks/earthworks under arable cultivation or at risk from a specific threat e.g. flood damage or run-off erosion.

Worcestershire is currently the only county monitoring undesignated heritage assets in this way, so it is not possible to carry out a direct comparison with other counties. Other regional surveys of the historic environment, such as English Heritage's monitoring of designated assets and the Historic Farmsteads Characterisation project, indicate that Worcestershire is broadly equivalent to its neighbours in terms of risk and loss, performing slightly better in some areas and slightly worse in others.

Likely evolution: Unlike Scheduled Monuments, where certain controls are in effect, undesignated assets have little or no protection. Management within Environmental Stewardship agreements can provide a solution, but only for those historic buildings in agricultural use. It is currently unclear how performance may be expected to progress.

Role of MLP: The MLP can help to prevent unlisted heritage assets from becoming at risk through policies to ensure that minerals sites do not compromise these assets, which could lead to a decline in their management. Policies should require archaeological investigations of any site where there may be undisturbed heritage assets.

The greatest role for the MLP may be in ensuring sufficient building stone/brick clay is available to provide for repairs to historic buildings, many of which should be maintained in the local vernacular style. This may require small-scale workings to be available, or for stocks of materials to be kept, to allow for small-scale repairs as and when needed.

Data sources:

Worcestershire County Council Archive and Archaeology Service, Undesignated heritage assets at risk, 2017

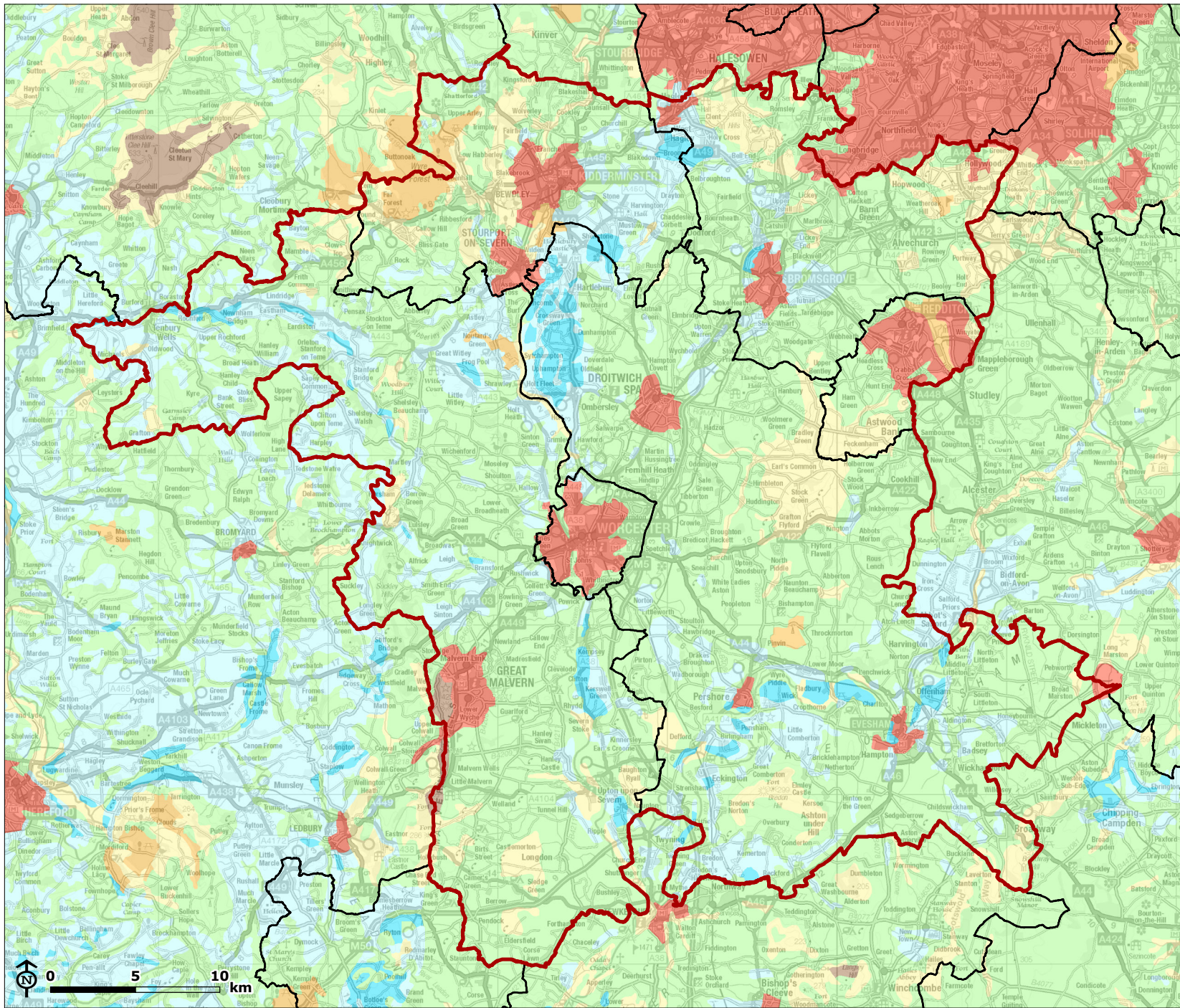
Material Assets - including land use and local amenity

Amount of land falling within Agricultural Land Classifications (hectares)

Key data: The Agricultural Land Classification provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. **Table A3.12** shows the amount of Worcestershire's land that has been identified as each Agricultural grade.

Table A3.12: Agricultural Land Classification in Worcestershire

Agricultural Land Classification	Area (hectares)
Grade 1	4,834
Grade 2	28,884
Grade 3	110,578
Grade 4	17,135
Grade 5	411
Non-agricultural	2,526
Urban	9,683



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Figure A3.4: Agricultural Land Classification in Worcestershire

- Worcestershire County
- Surrounding local authorities

- Agricultural Land Classification**
- GRADE 1
- GRADE 2
- GRADE 3
- GRADE 4
- GRADE 5
- NON AGRICULTURAL
- URBAN

Source: NE, OS

Map Scale @ A4: 1:320,000

LUC

worcestershire
county council

No regional assessment of land falling within each agricultural land classification has been identified, but the following figures show the hectarage of Grade 1 agricultural land in some of Worcestershire's neighbouring counties:

Table A3.13: Grade 1 agricultural land in neighbouring counties

Area	Hectares of Grade 1 Agricultural Land
Warwickshire	105
Shropshire	10
Gloucestershire	2,883
Herefordshire	8,961

These figures suggest that Worcestershire's agricultural land quality is good relative to other areas.

Likely evolution: Worcestershire has a relatively large resource of high-quality agricultural land, but it is not possible to chart how this may have changed in recent years, as monitoring is not undertaken. It is not clear how this may evolve in the future, but with national brownfield targets no longer applicable, it may be that increasing proportions of Greenfield land are used for development, which increases the chance of high quality agricultural land being lost to development.

Role of MLP: Minerals sites can only be developed where the resource exists, so this may mean that some high quality agricultural land is lost to development. However, the temporary nature of mineral sites may afford the opportunity to return the land to high quality agricultural (or other) use once the mineral operations are complete, and this could even see a net gain where sites are restored to agricultural land of better quality than that of the 'original' site.

Data sources: Planning for Soils in Worcestershire Technical Research Paper 2011

Hectares of Green Belt land

Key data: Based on 2018 data, Worcestershire has 41,390 ha of land within the Green Belt. This figure has remained the same since 2017, but has decreased since 2016, when the amount of land within the Green Belt was 41,600ha. Land within the Green Belt makes up approximately 24% of the county's total land area of 173,529 ha.

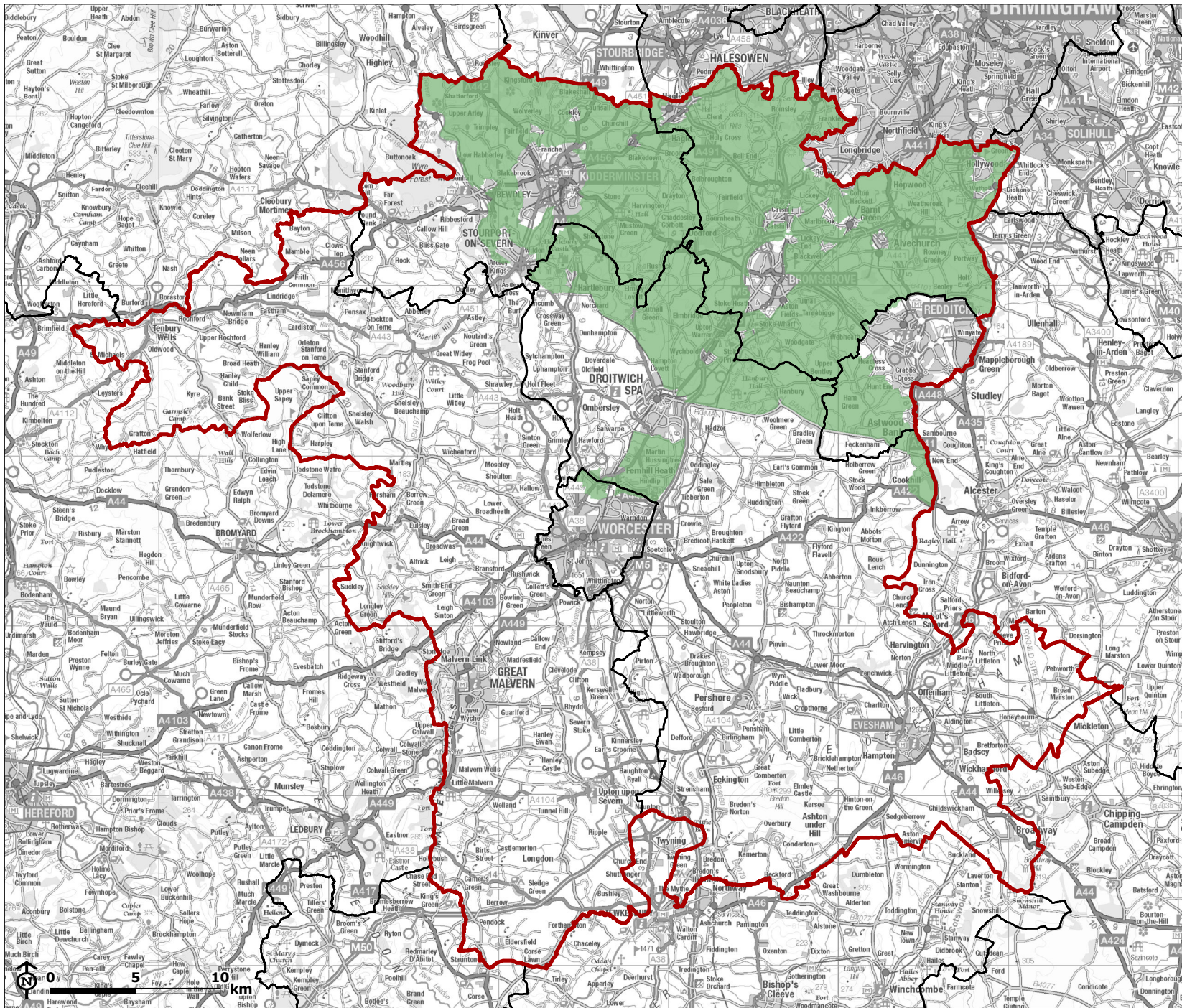
The amount of Green Belt land in Worcestershire decreased in 2014 by 0.02% (a 10ha loss in Wychavon), a further 0.07% in 2016 (a further 30ha loss in Wychavon) and by a further 0.05% in 2017 (no loss in Wychavon).

The loss in 2016 is explained in the South Worcestershire Development Plan Examination Inspector’s Report (February 2016), which states that "The land has been removed from the Green Belt for three reasons. First there was a clear error in its inclusion in the previous Local Plan. Second, the land does not perform any of the necessary Green Belt functions. Third, the land forms part of a larger site, with the remainder lying within Wyre Forest District and is also not in the West Midlands Green Belt." The reports do not explain the loss in 2014.

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Figure A3.5: Green Belt in Worcestershire

- Worcestershire County
- Surrounding local authorities
- Green Belt



Source: WCC, OS

Map Scale @ A4: 1:320,000



Table A3.14: Areas of Green Belt land (at end of March)

	2012	2013	2014	2015	2016	2017	2018	Change 2012-2018
Bromsgrove	19,480	19,480	19,480	19,480	19,480	19,300	19,300	=
Redditch	1,830	1,830	1,830	1,830	1,830	1,800	1,800	=
Worcester	240	240	240	240	240	240	240	=
Wychavon	8,870	8,870	8,860	8,860	8,830	8,830	8,830	=
Wyre Forest	11,220	11,220	11,220	11,220	11,220	11,220	11,220	=
Worcestershire	41,640	41,640	41,630	41,630	41,600	41,390	41,390	=
England	1,639,480	1,639,160	1,638,630	1,636,500	1,635,480	1,634,700	1,629,510	<0.1%

Likely evolution: No trend data for Green Belt land in Worcestershire has been identified, beyond a very minor reduction in Wychavon, Bromsgrove and Redditch districts from 2016 to 2017. Ongoing housing shortages mean that development pressure on the Green Belt is likely to increase. The Bromsgrove District Plan 2011-2030, adopted in January 2017, makes provision for a full Green Belt Review to be carried out by 2023, to enable approximately 2,300 dwellings to be allocated. This could see the net area of Green Belt reduce more significantly than in recent years.

Role of MLP: Minerals extraction is not inappropriate in the Green Belt providing the development preserves the openness of the Green Belt. The MLP could identify sites for mineral working which fall within the Green Belt. Whether or not each specific development coming forward was contrary to Green Belt policy would have to be determined on the merits of each scheme and whether or not they amounted to inappropriate use. Most mineral workings are temporary in nature, and upon completion sites are usually restored. Even if there is some impact on Green Belt openness during operations, it is unlikely that openness would be compromised in the longer term. The MLP should include polices to ensure that restoration of workings in the Green Belt is not inappropriate.

Data sources:

Local Authority Green Belt Statistics for England: 2017 to 2018, 4 October 2018

Natural Resources (Water and Air Quality)

Number of Air Quality Management Areas (AQMAs) in Worcestershire

Key data: All Local Authorities have a legal duty to review and assess air quality against national objectives, which include two for nitrogen dioxide (NO₂). The data is either obtained by continuous real time analysers or by using diffusion tubes that are exposed for a period of time before being analysed.

Where exceedances are found, local authorities have to declare Air Quality Management Areas (AQMAs) and produce Action Plans, the aim of which is to reduce the level of that pollutant to below the objective. The only exceedances of the objectives in Worcestershire are for annual mean of 40µg/m³ for NO₂.

The principal source of the nitrogen dioxide is emissions from road vehicles in busy and congested streets. Other pollution, including commercial, industrial and domestic sources, also contributes to background pollution concentrations.

There are currently ten AQMAs in Worcestershire:

Table A3.15: AQMAs in Worcestershire

District	AQMA
Bromsgrove	Worcester Road, Bromsgrove M42 Junction 1 at Lickey End, Bromsgrove Kidderminster Road, Hagley Redditch Road, Stoke Heath
Wyre Forest	Welch Gate, Bewdley Horsefair, Kidderminster
Wychavon	Worcester Road, Wychbold
Worcester City	Bridge Street/Dolday Lowesmoor/Rainbow Hill St Johns

In Bromsgrove, the AQMA at Kidderminster Road, Hagley is currently being revoked following a review of monitoring data that confirms non-exceedance of many years. In Worcester City, there has been a proposal to declare an AQMA along the administrative boundary of the City and following public consultation, a report is to be presented to Licensing Committee to declare a city wide AQMA. Since December 2017 a Task and Finish Group has been looking at measures that may improve air quality in the city and the result of that work is to be presented to Licensing Committee in December 2018. In Wychavon, Worcester Road, Wychbold, was recently consulted in March 2018 and has been designated as an AQMA.

Likely evolution: The number of AQMAs in Worcestershire has been constant since 2012. Whilst air quality is generally deteriorating, a county-wide Action Plan was produced in 2013. The Action Plan identifies and implements remedies that would provide general improvement and those that would resolve specific areas of poor air quality. Air quality at Newtown Road in Worcester improved such that this location was revoked as an AQMA in 2014. In addition, the Port Street, Evesham AQMA was revoked in 2017, following a period of 10 years of data collection.

Role of MLP: Minerals development can mean significant numbers of HGV movements, and mineral operations can cause localised air pollution through dust and emissions. The MLP should seek to guide development to locations that can be served by sustainable transport modes and avoid the potential to add to vehicle emissions, particularly through HGVs passing through heavily-congested hotspots.

Data sources:

Worcestershire Regulatory Services, Air Quality Action Plan Progress Report for Worcestershire, April 2015 – March 2016 (September 2016)

Worcestershire Local Nature Partnership State of the Environment Report (Air Quality Management Areas) 2018

DEFRA List of Local Authorities with AQMAs

Worcester Road, Wychbold AQMA Declaration Consultation Summary, April 2018

Port Street, Evesham AQMA Revocation Consultation Summary, April 2018

Water Quality

Key data:

River water quality is affected by many factors. These can generally be divided into point sources, which have a traceable discharge point, and diffuse sources, which cannot usually be traced back to a single discharge point. Examples of point sources include domestic and industrial waste water; examples of diffuse sources include polluted water and sediment

washing off fields, recreational areas, roads and pavements. There have been significant improvements in waste water discharges over recent years but pollution from diffuse sources is becoming an increasing threat.

The EU Water Framework Directive requires all surface and ground waters to reach 'good ecological' status (or potential in the case of Artificial or Heavily Modified Waterbodies) by 2027. In some cases the action required to meet good status / potential for some surface and ground waters are not technically feasible or are of disproportionate cost. These will have an alternative objective set by the River Basin Management Planning process (see **Appendix 2** for further details).

Quality of the county's water bodies is assessed by the Environment Agency under Water Framework Directive (WFD) classifications:

Table A3.16: Ecological (or potential) status of waterbodies in Worcestershire

Ecological status or potential	Number of water bodies
Good	10
Moderate	56
Poor	11
Bad	5

Some 82 river and canal water bodies fall wholly or partially within Worcestershire, representing around 700 km of watercourse. Six water bodies have been designated as 'artificial' and 12 as 'heavily modified'. These water bodies must meet Good Ecological Potential (GEP). The remaining 64 'natural' water bodies are required to meet Good Ecological Status (GES).

Worcestershire Water Courses do not compare very favourably with those in the wider area. As of 2016 10.26% watercourses within Worcestershire are classified as 'good' status. Within the River Severn basin, 14.29% of the watercourses have 'good' status (nationally, the figure is 16%).¹

Minerals operations have the potential to impact negatively on water quality. Depending on the minerals being worked, extraction itself can involve flushing by high-pressure jets, or by controlled pumping. The subsequent processing can involve water in washing and screening. The used water is cleaned and returned to the environment. If the treated water is not sufficiently clean, dissolved or suspended minerals can leach into the ground below the water table and cause water quality issues that could impact on human health and biodiversity.

Likely evolution: The largest challenge for those working to improve the quality of Worcestershire's rivers is in tackling sources of run-off from roads and fields. These diffuse sources of pollution are difficult to attribute to a single discharge point and will not be affected by the regulatory approach that has been successfully adopted to reduce the impacts of point source pollution.

Failure to meet WFD targets will mean the UK facing fines, some of which may be passed to local authorities. This is a major driver for change, and a great deal of attention is being paid to water quality from a broad range of partners. It is expected that water quality will therefore continue to improve in coming years.

Role of MLP: The MLP can help to ensure risks to water quality are minimised through requiring the siting and operation of mineral working to take into account run-off and waste water disposal.

Data sources:

Worcestershire Partnership State of the Environment Report

¹ Contains Environment Agency information © Environment Agency and/or database right

Environment Agency GIS data, sent to LUC by Worcestershire County Council²

BGS: Mineral Matters 11: Mineral Extraction and the Water Environment 2005

Water resource availability

Key data: Catchment Abstraction Management Strategies include the availability of water resources. The most recent CAMS completed by the Environment Agency for Worcestershire Middle Severn (which includes a large part of Worcestershire) notes that the main issue regarding resources in the area is the historic over-abstraction of groundwater for public water supply and its accompanying environmental impact. There is also a high demand for water to irrigate agricultural land, and this has the potential to conflict with environmental needs as the peak demand for irrigation usually coincides with periods of low flows within watercourses. This could have implications for water-intensive development (or multiple developments which aren't in themselves water-intensive, but which present a considerable extra burden when considered collectively). Liaison with the Environment Agency will be needed from the earliest stage to establish whether or not water is available.

Likely evolution: Resource efficiency will be essential if development is to be sustainable. Increasingly stringent standards in Building Regulations should mean that future domestic and commercial buildings consume less water, but the collective impact of new development could present a major difficulty for water resources.

Role of MLP: Many mineral operations are worked 'dry', which requires water to be pumped out of the quarry void and discharged, often off-site. The 'draw down' in the water table can have impacts on surrounding groundwater and hydrology. The MLP should cooperate with the environment agency to develop policies which complement the existing regulator regime with regard to abstraction and discharge licences.

Data sources:

Planning for Water in Worcestershire Technical Research Paper 2011.

Worcestershire Middle Severn Abstraction Licensing Strategy, February 2014, last updated 2018

Contaminated Land

Key data: The actual amount of land that is definitely 'contaminated' is not known. This indicator is a measure of all the work undertaken to clarify whether sites that have been subject to a potentially contaminative use, incident or activity, are 'Contaminated Land' or conversely are suitable for use. This covers sites that are contaminated from current activity, historical land-use, natural contamination or a one-off spill or incident. It is a measure of knowledge and associated risk as much as remediation of contaminated land sites. For most parts of the county the number of sites addressed proactively by landowners or developers is counterbalanced by new sites resulting from spills, leaks or incidents.

Currently, there were 18 properties in Redditch that were determined as contaminated land in 2011 and 2012, which continue to be remediated by installed active measures. As of 1st April 2011 there were considered to be 7,941.94 hectares of potentially contaminated land in Worcestershire. In 2016, the only known update since 2011, was the remediation of a site approximately 6.5 hectares.

During 2017/18 there have been a number of significant developments of greenfield sites across the county and the amount of brownfield sites has remained relatively stable. One notable exception is the ongoing investigation into potential landfill gas contamination around Pinches Landfill sites in Bromsgrove District. Additionally, Worcestershire Regulatory Services, on behalf of the local authorities, addressed a number of sites that are no longer considered to be potentially contaminated land. Following this work a small percentage of land that was potentially contaminated is no longer considered to be potentially contaminated, through inspection, investigation or remediation during 2013-14.

² WCC received this data from the Environment Agency in July 2018, although it is understood that classification data is from 2016.

Whilst this is an improvement in the amount of land no longer considered to be potentially contaminated land it is a little less than that achieved during previous years. There are several reasons for this:

- There has been an increase in the number of significant developments of greenfield sites across the county in line with Local District Plans.
- National funding opportunities for contaminated land projects have been significantly reduced by central government. This will likely increase burden of funding future Part 2A investigations and remediation projects on Local Authority at a time when local authorities are facing reduced resources.

Likely evolution: There are continuing efforts to remediate known contaminated land in Worcestershire. There is likely to be improved performance after more properties in Redditch are finished being investigated.

Role of MLP: The MLP should include policies to ensure that the risk of contamination from mineral extraction is minimised. This includes policies for the restoration of sites following the end of the extraction operations.

Data sources:

Worcestershire Local Nature Partnership State of the Environment Report (Contaminated Land) 2018

Annual production of land-won aggregates (sand and gravel)

Key data: In 2016, Worcestershire sand and gravel sales, over a 3 year period, decreased by 0.4 million tonnes and over a 10 year period decreased by 0.61 million tonnes. Conversations between planning officers and operators suggest that the economic recession in 2008 reduced local demand for sand and gravel. Patterns of sales in Worcestershire broadly reflect the trends in the region, as shown below.

Table A3.17: Sand and Gravel sales 2006-2016 (million tonnes)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Worcestershire	0.758	0.524	0.618	0.626	0.620*	0.659*	0.520*	0.538	0.399
Regional total	8.332	6.20	5.95	5.99	5.82	6.11	6.21	7.04	7.11

*Figures combined with Herefordshire due to reasons of confidentiality

Table A3.18 provides an overview of reserve figures for aggregate land-won sand and gravel across Worcestershire, however, for the years 2012-2013 reserves were not able to be separated from Herefordshire.

Table A3.18: Sand and Gravel Reserves for Aggregates 2008-2016 (million tonnes)

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Worcestershire	3.02	3.65	4.49	3.85			2.50	0.54	4.29
Herefordshire and Worcestershire					6.57	6.01			

Likely evolution: The likely evolution is unclear at this stage, but demand for sand and gravel is inextricably linked to the performance of the wider economy. If there is an increase in

construction and housebuilding, then it is likely that levels of extraction will increase. In addition, the outcome of Brexit could affect demand, but this is uncertain.

Existing policies guiding extraction of sand and gravel are perceived to be adequate, but the emerging Minerals Local Plan that will replace the version from 1997 should facilitate more development in the right places.

Role of MLP: The MLP will seek to ensure that an adequate supply of sand and gravel is extracted in Worcestershire to support the identified need. This need may be the same as the regional apportionment, or research may indicate that a different target is more appropriate.

Data sources: Worcestershire Local Aggregates Assessment, Data covering the period up to 31/12/2016 (July 2018)

Annual production of land-won aggregates (crushed rock)

Key data: The supply of crushed rock is problematic in terms of meeting both regional supply and the number of productive units. Difficulties arise because no significant applications for crushed rock extraction have been made in the county since 1997 (the only applications have been for alterations and a very modest deepening at Fish Hill, Broadway).

The lack of applications probably reflects the limited nature and distribution of hard rock within the county, very little of which appears to be of aggregate quality.

For reasons of confidentiality, figures for crushed rock sales in Worcestershire were combined with those in Herefordshire until 2011. In 2012 there were no crushed rock quarries operating in Worcestershire. Worcestershire's last crushed rock site ceased working and has been undergoing restoration since 2010. There were no sites with permitted reserves of crushed rock at 31st December 2015, and no planning applications for working crushed rock are pending decision. This means that Worcestershire has no permitted reserves, no productive capacity and no landbank for crushed rock.

Table A3.19: Crushed rock sales for aggregate purposes (million tonnes)

Crushed rock	2008	2009	2010	2011	2012	2013	2014	2015	2016
Herefordshire/ Worcestershire	0.216	0.224	0.2	0.33					
Worcestershire					0	0	0	0	0
Regional total	3.436	3.03	2.8	2.47	3.12				

Table A3.20: Crushed rock apportionment (Worcestershire's apportionment is 2.8% of regional production)

	2008-09	2009-10	2010-11	2011-12
Worcestershire	Confidential Below 2.8%	Confidential Below 2.8%	Confidential Below 2.8%	0

Likely evolution: The target is not being met. The development of the Minerals Local Plan will seek to address this issue.

Role of MLP: Local Aggregates Assessments have replaced the apportionment mechanism. The MLP will seek to facilitate crushed rock in appropriate locations.

Data sources:

Worcestershire Minerals and Waste Development Framework Authority Monitoring Report April 2015 to December 2015

Climate Change

CO₂ emissions

Key data: Data on carbon dioxide emissions, along with a number of other gases, is collected nationally in order to monitor progress towards UK targets (set under the Climate Change Act 2008) to reduce carbon dioxide emissions (CO₂) by 34% by 2020 and by 80% by 2050 compared to the 1990 baseline. The data is broken down by Local Authority area, and is only available on a two-year time lag; as of 2018, the latest data therefore represents the situation from 2016.

Latest CO₂ emission figures show that Worcestershire's per capita emissions have reduced by 1.5 tonnes compared with 2009, equating to a 13% reduction.

Table A3.21: CO₂ emissions per capita, 2009-2016

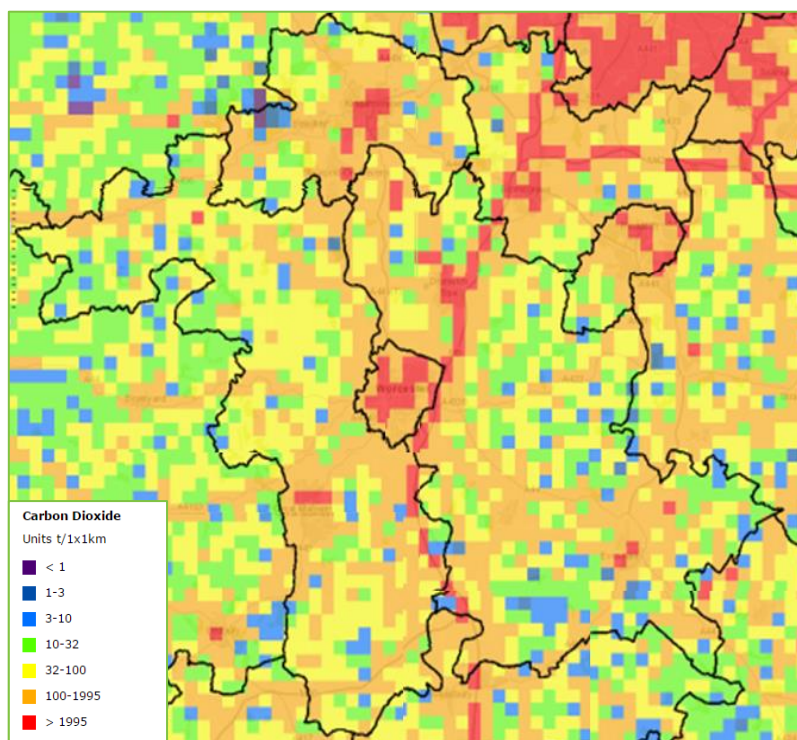
	2009	2010	2011	2012	2013	2014	2015	2016
Bromsgrove	8.5	8.7	8.1	8.2	8.2	7.8	7.5	7.3
Malvern Hills	8.8	9.0	8.4	8.3	8.2	7.8	7.1	6.9
Redditch	5.3	5.5	5.0	5.2	5.0	4.6	4.2	3.9
Worcester	5.1	5.3	4.9	5.0	4.8	4.4	4.0	3.7
Wychavon	10.4	10.8	9.9	9.9	9.8	9.2	8.8	8.4
Wyre Forest	5.3	5.6	5.3	5.4	5.2	4.7	4.4	4.2
Worcestershire	7.3	7.6	7.0	7.1	7.0	6.5	6.1	5.8
West Midlands	7.0	7.3	6.7	6.9	6.7	6.1	5.8	5.5
National	7.3	7.5	6.8	7.1	6.9	6.3	5.9	5.4

Table A3.22: Total CO₂ emissions, 2009-2016

	2009	2010	2011	2012	2013	2014	2015	2016
Bromsgrove	798	817	757	777	776	741	718	708
Malvern Hills	652	671	626	619	620	593	537	524
Redditch	441	461	418	436	421	386	356	334
Worcester	494	519	483	500	486	442	401	375
Wychavon	1,217	1,262	1,157	1,164	1,168	1,096	1,069	1,040
Wyre Forest	522	551	515	526	515	470	437	416
Worcestershire	4,124	4,281	3,955	4,021	3,986	3,727	3,518	3,397
West Midlands	38,803	40,414	37,544	38,656	37,992	34,948	33,503	32,237

Carbon emissions are not evenly spread across the county. The map below shows the concentration of CO₂ emissions across the county for 2015. Higher emissions are focussed around the urban areas and main motorway links. It is clear that the higher concentrations are near the centre of settlements, reflecting the areas which are more densely built up.

Figure A3.6: CO₂ emissions for Worcestershire 2015



Source: DEFRA UK Ambient Air Quality Interactive Map, 2017

Table A3.23: Per capita CO₂ emissions for Worcestershire and surrounding county/unitary areas, 2016

	2009	2010	2011	2012	2013	2014	2015	2016
Warwickshire	11.3	11.7	11.1	11.1	10.9	10.3	9.9	9.8
Staffordshire	8.2	8.6	8.1	8.2	8.1	7.4	7.2	6.9
Herefordshire	8.4	8.8	8.0	8.1	8.0	7.5	6.7	6.3
Shropshire	7.9	8.1	7.4	7.6	7.4	6.9	6.2	5.9
Solihull	7.1	7.5	7.1	7.5	7.3	6.8	6.6	6.3
Worcestershire	7.3	7.6	7.0	7.1	7.0	6.5	6.1	5.8
Gloucestershire	7.5	7.7	7.2	7.4	7.2	6.5	6.0	5.7
Birmingham	5.5	5.6	5.1	5.3	5.1	4.4	4.2	4.0

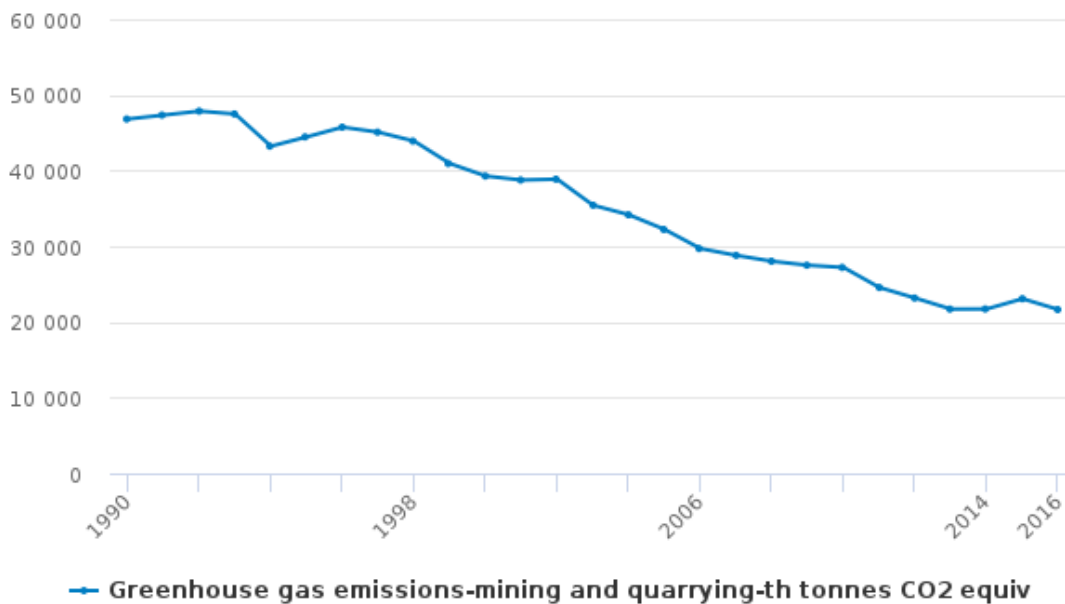
Comparisons with adjacent areas show that Worcestershire performs relatively well in terms of CO₂ emissions per capita, with only Birmingham and Gloucestershire performing better.

A British Geological Society (BGS) working group has examined certain minerals activity. By “taking account of total greenhouse gas emissions (i.e. including all greenhouse gases, mainly methane, not just carbon dioxide), Mining & Quarrying emissions have fallen significantly more than for the UK economy as whole, with the onshore minerals sector declining by 85%. The principal cause of this decrease is a significant reduction in methane emissions resulting from the contraction of the coal industry (a major emitter of methane).”

In addition, “the UK is aiming for a low carbon economy, and has a statutory target to reduce greenhouse gas emissions by at least 80% below the 1990 baseline by 2050. We can help achieve our carbon reduction objectives by making the best use of our domestic mineral resources, where economically and environmentally feasible to do so. Carbon mitigation measures – renewable energy, CCS, waste minimisation, recycling and greater resource and energy efficiency - are crucial elements in limiting increased demand for new primary

minerals. Facilitating the retention of efficient yet still energy intensive processes in the UK rather than importing the resultant products from less regulated countries may also yield a net global benefit in terms of carbon emissions.”

Figure A3.7: Greenhouse gas emissions – mining and quarrying (th tonnes CO₂ equivalent)



Source:

Office for National Statistics, UK Environmental Accounts: 2018

Notes: 1. Components may not sum to totals due to rounding

2. Includes emissions from fuel sources which are used by road vehicles

Figure A3.7 shows the total amount of atmospheric emissions for mining and quarrying in the UK from 1990 to 2016. There has been an overall decrease since 1990.

The BGS group notes that "Transporting minerals from source to users is clearly carbon-intensive. The group estimated that haulage accounts for just over 32% of the embodied carbon in the extraction and initial movement to first point of UK land-won minerals, and coal imports (the main import in competition with domestic mineral production). While minimising haulage distances and costs is desirable in itself, and may be driven by business pressures, it may not be practicable for wider reasons to locate processing closer to mineral sources. And cutting the initial transport distance may simply add distance to the movement of products to market after processing".

Likely evolution: Reductions in CO₂ emissions will depend on a number of factors, including successful action on energy efficiency and sustainable transport measures. As long as economic growth remains inextricably linked to fossil fuels, the wider economy is probably the greatest single influence on CO₂ emissions. There is already a wealth of site-based examples in energy management in the extraction, processing and movement of material, including action on energy monitoring, audit of motor ratings, pumping, conveyors, and fuel-efficient driver training. However there is a need to spread awareness, broaden company commitment and ensure action is followed through across the whole of the UK minerals sector.

Role of MLP: The MLP has the potential to influence CO₂ emissions in a number of ways (e.g. the type of minerals being won, the methods used for extraction, the methods used for transporting goods, and the construction and operation of site plant, buildings and processing operations).

The MLP will provide a framework for the winning of energy minerals, including coal, the burning of which creates substantial CO₂ emissions. Whilst the coal in the county is limited, and is not considered to be of marketable value, in facilitating developments for energy

minerals, the MLP could be seen to be allowing continued growth in fossil fuel usage. It would not be practicable for the MLP to seek to prevent such developments.

Policies in the MLP should seek to ensure that CO₂ emissions from plant and buildings are minimised through requiring sustainable construction. Residual emissions can be mitigated through requiring on site renewable energy or, where this is demonstrated to be unfeasible, requiring contributions to off-site provision.

Data sources:

UK local authority and regional carbon dioxide emissions national statistics: 2005-2016

UK Minerals Forum: Future Minerals Scenarios for the UK, Final Report, 2014

UK Minerals Forum: Trends in UK Production of Minerals. 2014

Office for National Statistics, UK National Accounts, The Blue Book: 2018

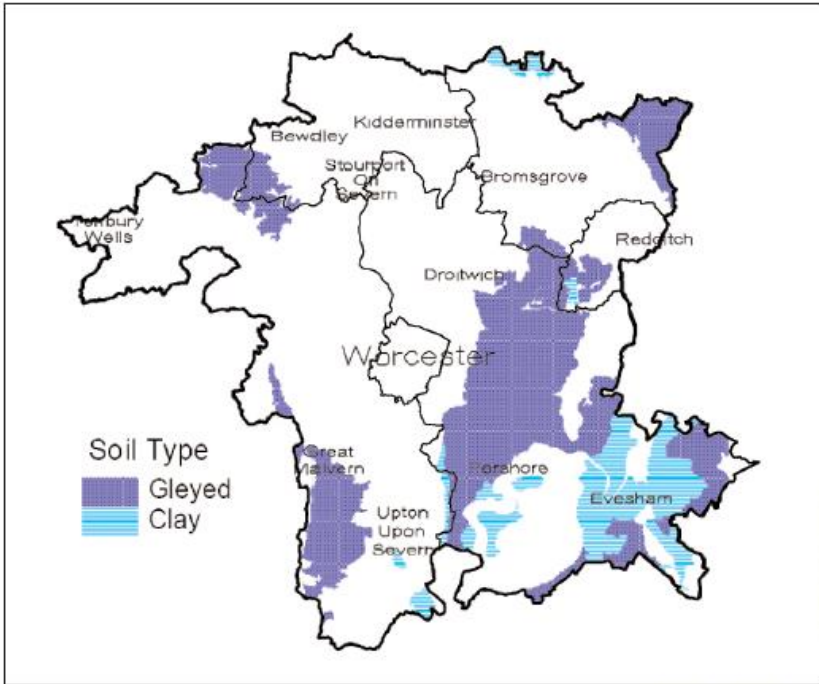
Predicted impacts of climate change

Key data: Worcestershire's climate is changing. We now have shorter milder winters, but increasingly extreme weather. Such changes will impact on Worcestershire's environment, economy and society. For example:

- **Biodiversity:** Changing conditions may be beneficial to some species but harmful to others. For example, some species may be lost due to wetland habitats changing and drying up.
- **Geodiversity:** Changing soil types and structures; soil erosion, leading to loss of peat soils and subsequent release of carbon dioxide; changes to streams and rivers.
- **Agriculture:** Problems of drought, flooding and new crop pests.
- **Transportation:** Roads may be less affected by frost and freeze/thaw but may be closed and damaged more often due to flooding. Higher temperatures likely to affect road and rail.
- **Health Services:** More heat related summer deaths and cases of food poisoning; fewer cold related winter deaths.

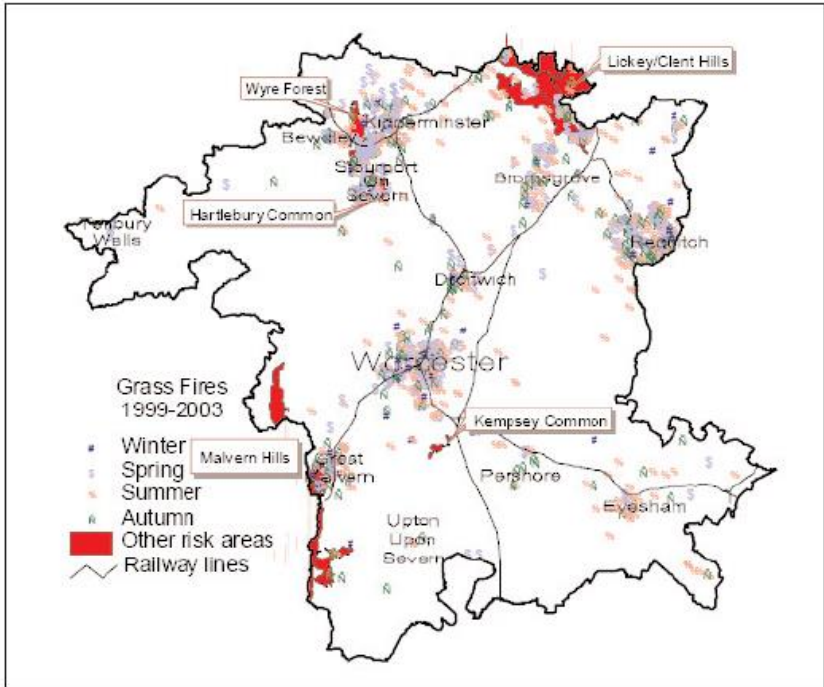
Alongside these threats, there are opportunities for individuals to reduce energy consumption in their homes and save money on fuel bills. Lifestyle changes such as reducing car use and switching to walking or cycling can contribute to health improvements. There are opportunities for business in the so called "green economy" developing new products and services that respond to the need to reduce use of fossil fuels and subsequent CO₂ emissions and adapt to the changing climate. Leisure and tourism are important industries for the county. People may take more day trips and holidays in the UK due to the warmer weather and the worldwide global downturn. This could mean more spending at local businesses. The challenge is to ensure that this does not further threaten Worcestershire's environment.

Figure A3.8: Map of increased risk of subsidence in Worcestershire



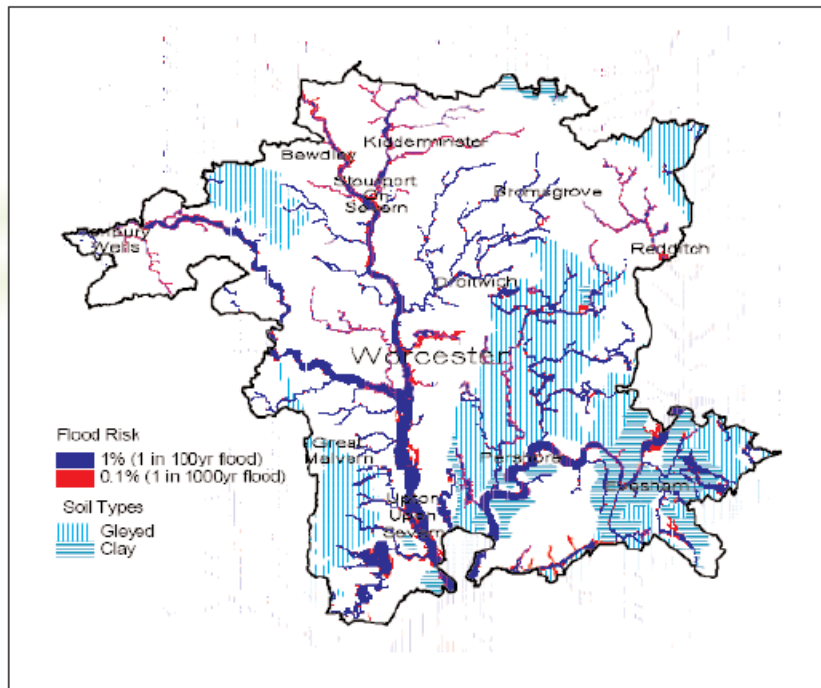
Source - Worcestershire Climate Change Impacts Study

Figure A3.9: Map of areas at risk from outdoor fires in Worcestershire



Source - Worcestershire Climate Change Impacts Study

Figure A3.10: Map of areas at risk of flooding in Worcestershire



Source - Worcestershire Climate Change Impacts Study

Likely evolution: In the next decade and beyond it is predicted there will be further climate change and the incidence of extreme weather will increase. Such changes will impact on Worcestershire's environment, economy and society. Worcestershire residents believe that many of the impacts of climate change are already being felt in the county and where this is not already the case that they will do so in the future.

Role of MLP: The MLP has a major role to play in mitigating climate change, and in adapting to its unavoidable impacts. CO₂ emissions can be influenced by, among other issues, the type of minerals being won, the methods used for extraction, the methods used for transportation, and the construction and operation of site plant and buildings.

The MLP will provide a framework for the winning of energy minerals, including coal, the burning of which creates substantial CO₂ emissions. In facilitating developments for energy minerals, the MLP could be seen to be allowing continued growth in fossil fuel usage. However, it would not be practicable for the MLP to seek to prevent such developments.

Policies in the MLP should seek to ensure that CO₂ emissions from plant and buildings are minimised through requiring sustainable construction. Residual emissions can be mitigated through requiring on site renewable energy or, where this is demonstrated to be unfeasible, requiring contributions to off-site provision.

The restoration of mineral sites can provide a valuable biodiversity resource that could help species to move in line with the changing climate, as part of a wider network of green infrastructure. Restoration can also provide a recreational resource that could form part of the local tourism offer, capitalising on the projected increase in local temperatures and associated increase in holiday visitors.

The MLP will need to include policies to ensure mineral operations are resilient to predicted climate change impacts, including flooding and subsidence.

Data sources:

Worcestershire Climate Change Strategy 2012-2020

G Cavan, Worcestershire Climate Change Impacts study, 2004

Energy

Total final energy consumption by local authority (Gigawatt-hours)

Key data: Worcestershire consumed a total of 13,198 GWh of energy in 2016, down from 15,110 GWh in 2008. This is a reduction of around 12.6%. The district breakdown is as follows:

Table A3.24: Total sub-national final energy consumption 2008-2016 in GWh

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bromsgrove	2,962	2,795	2,794	2,679	2,659	2,693	2,716	2,689	2,700
Malvern Hills	2,303	2,229	2,147	2,036	1,969	2,011	2,033	1,981	1,976
Redditch	1,829	1,696	1,497	1,426	1,379	1,354	1,408	1,360	1,376
Worcester	1,786	1,684	1,689	1,637	1,603	1,583	1,588	1,538	1,548
Wychavon	4,301	4,124	4,100	3,887	3,766	3,864	3,864	3,879	3,904
Wyre Forest	1,928	1,781	1,821	1,755	1,720	1,710	1,718	1,787	1,694
Worcestershire	15,110	14,309	14,049	13,420	13,095	13,215	13,327	13,234	13,198

Energy consumption increased in all district council areas between 2015 and 2016, except for Wyre Forest and Malvern Hills. From 2008 to 2012/13 there has been an overall decrease in energy consumption, however, since 2013 most of the district council areas have seen an overall increase in energy consumption. There is a strong correlation between economic activity and energy consumption, and the continuing recovery from the recession has seen increases in consumption.

When energy consumption per capita is analysed, the pattern appears similar: an overall downward trajectory, albeit with some recent minor increases. This will be essential if overall energy consumption is to decrease, as new housing, transport and economic growth will create net additions to the county's energy demands.

Likely evolution: The economy has improved in the years since the recession, whilst energy consumption has continued an overall downward trend. It may therefore be reasonable to expect Worcestershire's energy consumption to continue to decrease. There is expected to be greater delivery of renewable energy for all areas of the UK, including Worcestershire, and increasingly stringent standards for construction and transport should see energy efficiency continue to improve.

Role of MLP: Minerals operations can be energy-intensive. The MLP can help to mitigate energy use through guiding development to sustainable locations, to minimise the need for high-energy transport. Energy use can be minimised through requiring plant and buildings to be sustainably designed and constructed.

Data sources: DBE&IS, Sub-national total final energy consumption statistics: 2005-2016

Flooding

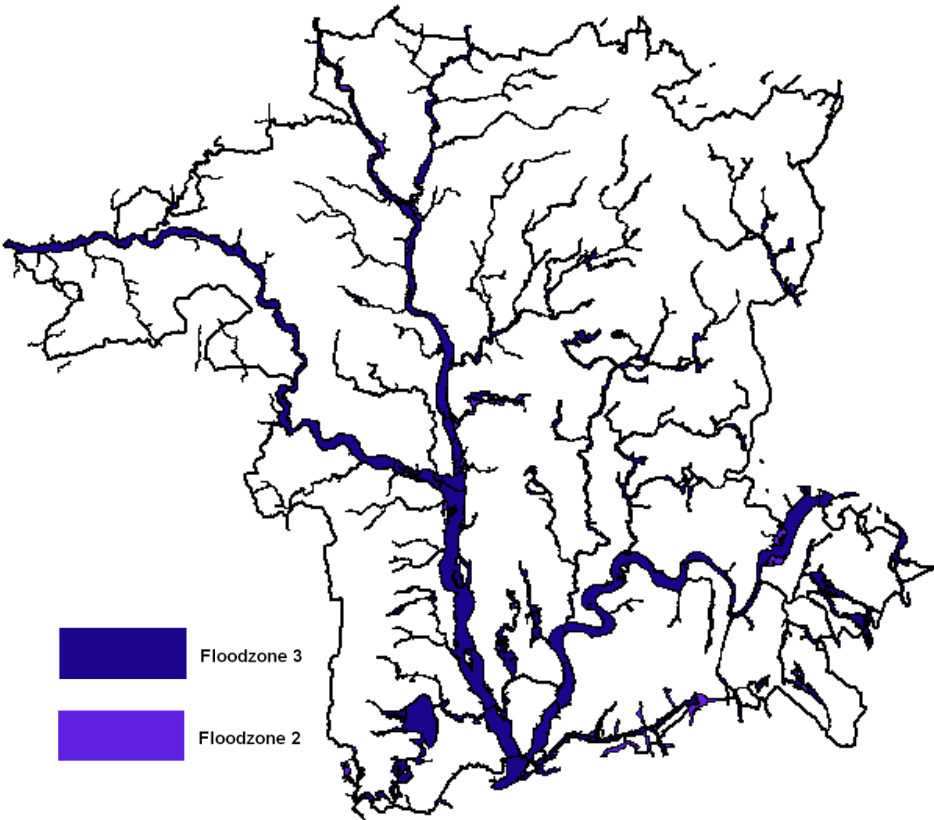
Properties at risk of flooding

Key data: Flooding is considered to be a major issue for Worcestershire. Over the years floods have occurred as a result of rivers including the Severn, Avon and Teme bursting their banks and through surface water flooding as a result of intense rainfall. During severe flooding in 2007, the cost to Worcestershire from closures and disruption has been estimated at £6.4m/week.

Each District Council within Worcestershire produced a Strategic Flood Risk Assessment. These assessments found that fluvial and surface water are significant sources of flooding within the county. Although the risk of groundwater flooding and sewer flooding are generally lower than the risk of fluvial and surface water flooding, they are locally important and should be considered as part of any site-specific flood risk assessment. As a result of the impact of climate change, the risk in terms of fluvial flood risk in the county is set to increase.

Information relating to the number of properties in Worcestershire at risk from fluvial flooding and surface water flooding is provided by the Environment Agency. The properties at risk data is updated following a flood event, and covers residential and non-residential properties in Worcestershire. Data provided by the Environment Agency for properties at risk of flooding accounts for properties that appear in the relevant flood zones and represents the situation without flood defences. From 2011 onwards, data has also been available on properties at risk of surface water flooding.

Figure A3.11: Flood Zones in Worcestershire



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Worcestershire has the second largest percentage land area at risk of flooding in the West Midlands Region (approximately 10%), but in terms of numbers of households at risk is performing better than the national average.

It is estimated that in the West Midlands, 6.5% of land has a 1% chance of flooding in any one year. This puts around 4% of properties in the region at risk of flooding. Around 80,000 of these properties at risk are thought to be residential.

In England and Wales, 9% of people live or work in properties at risk of flooding.

Fluvial Flooding

Approximately 11,200 (4.3%) addresses are at risk from fluvial flooding and approximately 20,000 (7.8%) from surface water flooding. Fluvial flooding has occurred in South Worcestershire (Worcester City, Malvern Hills and Wychavon Districts) on several occasions in the past. The most recent notable events occurred in 1998, 2000, 2007 and the large scale and disruptive flooding experienced in the winter of 2014.

Surface water flooding

The Worcestershire Surface Water Management Plan (SWMP) Consultation Document (September 2018) has been produced by WCC working in partnership with Bromsgrove District Council, Redditch Borough Council, Wyre Forest District Council, Worcester City Council, Malvern Hills District Council, Wychavon District Council, the Environment Agency, Severn Trent Water Limited and the Lower Severn Internal Drainage Board.

The SWMP found that there are currently 1,700 floodspots in Worcestershire. A floodspot includes flooding sources, the number of impacted properties, the number of impacted business, and the number of impacted pieces of critical infrastructure. Some 18% of the local authority high priority floodspots have a 'red' status which signifies that mitigation work is either already underway or complete. 38% of the floodspots are considered 'green' which means they are completed, however they will need to be maintained, therefore continued capacity and revenue funding is needed.

The flooding event in 2007 was particularly significant in terms of impact on people, infrastructure, businesses, properties and the environment in Worcestershire with over 4,700 properties being internally flooded. It has been estimated that the total cost for that flooding event was around £6.4 million per week. Major surface water and main river flooding has occurred again as recently as February 2014 and February 2016.

Likely evolution: It is hoped that with more stringent planning policy and greater investment in flood defence projects in Worcestershire, the number of properties at risk of flooding will decrease. However, the climate is expected to change, leading to an increased frequency and intensity of extreme weather events such as heavy rainfall, and it is likely Worcestershire will see more flooding incidents and floodplains could increase.

Following the introduction of the Flood and Water Management Act in 2010, Worcestershire County Council was named as a Lead Local Flood Authority, thus having increased responsibility for managing flood risk in our area. A Strategic Flood Risk Management Group and Land Drainage Partnership were set up under the Council's leadership. Funding has been secured to aid improvement works to local drainage systems to alleviate surface water flooding issues. Much has been achieved since the floods of 2007, in reducing the impacts of flooding in both larger scale projects such as Upton upon Severn and also in delivering the vital smaller projects that have reduced flood impacts for both residents and businesses in local communities across the county. Over the last seven years, Worcestershire County Council provided in excess of £14 million of capital investment for flooding and drainage projects across the county.

Role of MLP: Mineral operations, depending on their size, nature and location, have the potential to influence flooding through changes to the landform and the water table. The MLP may be able to help alleviate flooding by providing for the mineral resources needed for flood defence works, and some mineral sites may be able to act as water storage in times of flood, or offer landscaping to slow the run-off of storm water in times of heavy rainfall. Mineral workings and or restored sites can also create greater flow capacity by improving channels to reinstate more natural fluvial-floodplain processes.

Data sources:

Environment Agency – 'flooding and coastal erosion'

Worcestershire Minerals Local Plan, Review and update of the Surface and Ground Water Protection Issues, including a Flood Risk Assessment of the Areas of Search, Consultation Document, September 2018

Worcestershire Local Flood Risk Management Strategy 2015-2021, Adopted March 2016
Worcestershire Surface Water Management Plan, June 2018
Worcestershire Local Nature Partnership, State of the Environment Report

Access to Services

Key data: In Worcestershire there are over 4,600km of public rights of way. Many rights of way are important in their own right, providing access to the countryside, opportunities for active recreation and cultural links; however they can also contribute to the wider environment, providing corridors for biodiversity and contributing to landscape character, local distinctiveness and the experience and character of the historic environment.

In regards to access to education, increasing numbers continue to put pressure on primary school places in the urban centres. Action has been taken to provide additional places over recent years, with some further expansions still to take place to ensure sufficiency of primary places. A significant challenge with regards to education provision will be to manage the impact of changes in age range throughout Worcestershire.

Most health, education and other key local services are located in the more urban areas within Worcestershire. There are five main town centres; the city of Worcester, Malvern, Redditch, Bromsgrove and Kidderminster. While there are a few other fairly urban areas that have access to a number of services, the majority of the remaining area of Worcestershire has more limited access to services and facilities, especially with regards to hospitals, GP surgeries and schools.

Likely evolution: The likely direction is unclear at this stage, however, there is potential for mineral extraction to reduce access to green spaces in the short term, but there is also potential for the restoration of sites to contribute positively to the area by increasing the amount of accessible green space and improved public rights of way. Minerals development may temporarily prevent or alter access to green spaces, public rights of way or other access routes, but by planning and designing individual sites as part of a landscape-scale corridor, opportunities to connect, extend or enhance assets can be optimised.

Role of MLP: The MLP can seek to ensure that development proposals provide for full pre-application consultation where appropriate, including making available information to allow those affected by proposals to be fully informed. Additionally, the MLP can outline a desired plan of action for when the mineral extraction process is completed and restoration of sites can be undertaken.

Data sources:

Worcestershire Minerals Local Plan, Fourth Stage Consultation

Geographic Information Systems (GIS) data from Worcestershire County Council

Worcestershire County Council, School Capacity Collection 2017

Health

General Health categories

Key data: The Office of National Statistics census data provides an indication of the general health of the population in an area. The latest available figures are from 2011 and are shown in the table below.

Table A3.25: ONS General Health

Classification	Population (%)
Very Good Health	263,127 (46.5%)
Good Health	197,450 (34.9%)
Fair Health	76,406 (13.5%)
Bad Health	22,612 (4%)
Very Bad Health	6,574 (1.2%)

Source: General Health, ONS, 2011

Note that general health is a self-assessment of a person's general state of health. People were asked to assess whether their health was very good, good, fair, bad or very bad. This assessment is not based on a person's health over any specified period of time.

The majority of the population in Worcestershire is in very good and good health.

Since Worcestershire is a very rural county, in some districts the population is quite dispersed. Isolation and loneliness is a risk to health and wellbeing, particularly for older people living in rural areas.

The 2016 Viewpoint (an annual survey of Worcestershire residents) results show that in Worcestershire as a whole, overweight and obesity is seen as by far the greatest threat to health (mentioned by 59% of respondents), followed by physical inactivity (37%). When asked about the importance of a healthy lifestyle; two thirds strongly agree that that "a healthy lifestyle will reduce their chances of getting ill" but only a quarter of Worcestershire residents strongly agree they "live a healthy lifestyle."

The 2017 Joint Strategic Needs Assessment (JSNA) Annual Summary noted that overall Worcestershire has good health outcomes and was consistently better on some mortality measures than England for a long period, including incidents of cardiovascular diseases and cancers. However, for cardiovascular diseases and cancers, the two biggest causes of mortality for under 75s, the gap between the England average and Worcestershire had narrowed over time and for cancers had closed entirely. However, more recent data from the 2018 JSNA Annual Summary suggests that this trend may be changing in a positive direction and that the gap between Worcestershire and England may have begun to widen.

Likely evolution: The likely direction of performance is unclear at this stage; however, Worcestershire's general health is expected to change positively. For example, an issue that was highlighted in the 2016 assessment and has continued to be mentioned in more recent assessments is the narrowing of the gap between Worcestershire and England in key health indicators. From 2016, Worcestershire's health, based on those indicators, had been worsening and getting closer to the national average³. However, more recent data suggests that this trend may be changing in a positive direction and that Worcestershire is once again starting to perform better than the national average.

Role of MLP: Access to the natural environment can reduce stress levels and encourage people to become more active, helping to tackle obesity, coronary heart disease and mental

³ England's 'good' health average has increased by 0.2% from 2001 to 2011 while the West Midlands 'good' health average has decreased by 0.46% during the same time period. Additionally, the National well-being measures, September 2018 release notes that 51.1% of adults aged 16 and over in England are satisfied with their health compared to the 49.5% of adults aged 16 and over in the West Midlands.

health problems. During operation some mineral workings may impact on public rights of way, including footpaths and bridleways. Depending on how these public rights of way cross the site, it may be possible in some cases to work around them. In other cases this would result in sterilising significant mineral deposits and diversion or closure of public rights of way may be more appropriate.

There are significant opportunities for the restoration of mineral workings to improve public access to the natural environment. In the past, workings in Worcestershire have been restored to include public footpaths and nature trails, bird hides and other recreational facilities, such as fishing and water sports. However, the potential to achieve such gains will often depend on the specific site and the landowner.

Data sources: Office for National Statistics, Census 2011, General Health

Worcestershire Health and Well-being Board Joint Strategic Needs Assessment (JSNA), September 2016, 2017 and 2018

Office for National Statistics, General Health in England and Wales: 2011 and comparison with 2001

Office for National Statistics, National Well-being Measures, September 2018 release

Waste

Household waste produced per head of population

Key data: The amount of controlled waste generated in Worcestershire is reducing, and the position is improving.

Waste can be broken down into four broad categories: local authority collected waste (formally known as 'municipal' or 'household' waste); commercial and industrial waste; construction and demolition waste; and hazardous waste. The monitoring regimes differ for each waste stream, and so while some of the data reproduced here is regularly updated, other data relies on older studies.

The table below shows the total waste collected from households in thousand tonnes for England from 2014 to 2016.

Table A3.26: Household waste collected (thousand tonnes)

Waste from Households	2014	2015	2016
Waste Collected	22,355	22,225	22,770
Recycling	22,355	22,225	22,770
Dry Recycling	18,137	18,211	18,597

Total Waste collected from households across England has increased from the period of 2014 to 2016. For 2016/17, in Worcestershire, the local authority collected 305,511 tonnes of waste overall and 276,030 tonnes of household waste.

The West Midlands region produced 428.8kg collected household waste per person. In addition, 2,492 thousand tonnes was the total of household waste in 2016/17. In 2009, the West Midlands region produced 11.4 million tonnes of waste, compared to 13.6 million tonnes in 2007. The Defra Digest of Waste and Resource Statistics- 2015 Edition shows that the amount of commercial and industrial waste produced in the UK has increased since 2009:

Table A3.27: Estimate of total C&I waste and sub-sector totals, UK, 2012

	Industrial sector (thousand tonnes)	Waste 2009 ('000 tonnes)	% change 2009 to 2012
Industrial sector	20,035	17,378	15
Commercial sector	27,532	27,620	-0.3
ENGLAND TOTAL	47,567	44,998	5.4

Source: Defra Digest of Waste and Resource Statistics- 2015 Edition

The reviewed Joint Municipal Waste Management Strategy (agreed by all 7 Worcestershire and Herefordshire Councils) is based on the assumption that household waste generated per household will remain stable but that the number of households will increase and that household waste will therefore increase over the life of the JMWMS (currently to 2034).

The National Waste Strategy currently assumes that Commercial and Industrial waste is made up of 48% industrial waste (which will increase at 0% p.a.) and 52% Commercial waste (expected to increase at a rate of 0.5% p.a.) up to 2019/20. The County Council currently expects Construction and Demolition waste generated in the county to remain stable and Hazardous waste to see a small increase from changes in the number of households. The net effect is that a small but consistent rate of waste increase is predicted in Worcestershire for the foreseeable future.

Table A3.28: Projected waste arisings: Worcestershire (tonnes per annum)

	2020/21	2025/26	2030/31	2035/36
C&I waste projection (inc. agricultural waste)	692,073	746,684	808,774	879,366
C&D waste projection	419,520	419,520	419,520	419,520
MSW projections	438,496	455,175	471,854	485,197
Hazardous waste projection (inc. clinical and radioactive waste)	73,670	73,719	73,768	73,808
Total waste arisings projection	1,623,759	1,695,098	1,773,916	1,857,891

Likely evolution: New legislation and policy initiatives are expected in the next few years to reflect the Revised Waste Framework Directive and the government's green ambitions. In practice these increases in arisings do not appear to be happening, as a result of the economic downturn and/or as a result of policy initiatives to reduce waste and increase awareness. There could

Role of MLP: The MLP has a role to play in promoting the reduction, re-use and recycling of some waste streams, such as construction, demolition and excavation wastes, but has no direct impact of the levels of household waste produced.

Data sources: DEFRA Sustainable Development Indicators 2013

Local Authority Collected Waste Statistics-England

Defra Digest of Waste and Resource Statistics- 2015 Edition

Waste sent to landfill

Key data: The percentage of all types of waste that go to landfill has reduced year-on-year since 2010. In 2010 the amount of waste sent to the landfill was 443,205 tonnes compared to 2016/17 where it reduced to 95,237 tonnes.

Likely evolution: Increasing landfill taxes, as well as options for reuse and recovery, should help to ensure that the proportion of waste sent to landfill continues to decrease. The opening of the 'EnviRecover' energy-from-waste facility in 2017 should help to ensure that the proportion of waste sent to landfill remains low, as there is now a long-term contract for much of the waste generated in Herefordshire and Worcestershire to be thermally treated at the facility.

Role of MLP: The MLP has a role to play in promoting the reduction, re-use and recycling of some waste streams, such as construction, demolition and excavation wastes, but has no direct impact of the levels of household waste produced.

Data sources: Worcestershire Minerals and Waste Development Framework Authority Monitoring Report, April 2015 – December 2015

Recycling and recovery rates for Household, Commercial and Industrial wastes

Key data: The proportion of Worcestershire's household, commercial and industrial wastes that are recycled or recovered has decreased significantly since 2014, and currently stands at 47.9%. There was, however, an increase from 2013 to 2014 where the percentage was 71%. Worcestershire's 'Envirosort' materials reclamation facility has been operational since 2009. The facility sorts household recycling collections from Herefordshire and Worcestershire, and has helped to ensure high rates of recycling.

Table A3.29: Proportion of household, commercial and industrial waste recycled or recovered

2010	2011	2012	2013	2014	2015
41%	47%	62%	58%	71%	47.9%

Progress towards Household, Commercial and Industrial (HCI) milestones were incorrectly shown in previous years. Although recycling rates were lower in 2015 than 2012, at 47.9% they met the re-use and recycling milestone of 46.5%, however recycling rates failed to meet the re-use, recycling and 'other recovery' milestone.

The table below displays that the percentage of local authority collected waste (LACW) that is being re-used, recycled and recovered has increased since 2009, which is in line with the reducing amount of waste that goes to the landfill every year.

Table A3.30: Percentage of Local Authority Collected Waste (LACW) managed in Worcestershire (targets and baseline)

	2009-2010 (baseline)	2015-2016 (actual)	2020-2021 (target)
LACW (re-use and recycling)	45%	48%	50%
LACW (re-use, recycling & other recovery)	56%	68%	78%

Likely evolution: The evolution of this indicator is unclear, but increasing landfill taxes and moving towards more sustainable packaging should help to encourage more recycling in the future.

Role of MLP: The MLP has a role to play in promoting the reduction, re-use and recycling of some waste streams, such as construction, demolition and excavation wastes, but has no direct impact of the levels of household waste recycled.

Transport

CO₂ emissions in the county arising from road transport

Key data: From 2009 to 2012, Worcestershire reduced its CO₂ emissions for road transport. However, since 2014, Worcestershire and each district within it, has had increased CO₂ emissions.

Table A3.31: CO₂ emissions estimates for road transport, (kt CO₂)

	2009	2010	2011	2012	2013	2014	2015	2016
Bromsgrove	455	451	433	428	436	439	449	455
Malvern Hills	309	303	299	283	287	293	304	312
Redditch	94	93	90	85	82	84	85	86
Worcester	109	108	105	101	100	102	103	105
Wychavon	538	533	525	502	512	520	538	553
Wyre Forest	152	151	146	141	139	141	144	146
Worcestershire	1,6556	1,639	1,598	1,540	1,556	1,579	1,622	1,656
West Midlands	12,349	12,295	12,137	12,038	11,901	12,060	12,359	12,612
England	127,043	125,832	123,762	122,380	121,363	122,860	125,495	128,053

Table A3.32: Per capita CO₂ Emissions estimates for road transport, excluding motorways (kt/capita)

Local Authority	Per capita CO ₂ Emissions (kt/capita)
Bromsgrove	0.005
Malvern Hills	0.004
Redditch	0.001
Worcester	0.001
Wychavon	0.004
Wyre Forest	0.001
Worcestershire	0.003

The overall CO₂ emissions in Worcestershire have been increasing since 2012. Overall CO₂ emissions for the West Midlands and England have been increasing steadily since 2013.

In relation to the 2016 population estimates for each district, Bromsgrove, Malvern Hills and Wychavon had the highest CO₂ emissions kt/per capita ratio.

Likely evolution: The likely direction of performance is unclear at this stage.

Role of MLP: The extraction of minerals often involves substantial vehicle movements, including HGVs to transport plant and extracted material. Additionally, vehicle emissions can come from staff commuting, visitors, etc. As minerals can only be extracted where they are found, this result in long-distance transporting of material to where it is needed. The MLP can seek to influence mineral site selection by guiding operators to sites with the potential to make use more sustainable transport modes, including rail and water-borne transport. If possible, the MLP could also encourage the use of local minerals close to where they are extracted. The MLP can also develop policies to require sites to have green travel plans in place.

Data sources: National Statistics UK local authority and regional carbon dioxide emissions national statistics: 2005-2016

Growth with Prosperity for All

Average Worcestershire household income

Key data: Worcestershire's Gross Disposable Income has been increasing for each district since 2013.

Table A3.33: Gross Disposable Household Income (£ million) By District, 2016

Local authority	Gross Disposable Income (£ million)
Bromsgrove	1,952
Malvern Hills	1,478
Redditch	1,678
Worcester	2,102
Wychavon	2,435
Wyre Forest	1,890

Likely evolution: Uncertainty over the economy, including Brexit, means it is difficult to predict how Worcestershire's average income may change. In a national commentary, PricewaterhouseCoopers state that earnings growth "is now much less clear after the vote to leave the EU. On the one hand, higher consumer price inflation due to the weaker pound could feed through into higher nominal earnings growth, but on the other hand this could be offset by weaker economic growth and so labour demand after Brexit. Balancing these two effects, our preliminary projection is that earnings growth remains fairly flat in 2016-17 at just over 2% in cash terms, with real earnings growth declining slightly in 2016 and falling back to around zero in 2017. But there are considerable uncertainties around any such projections at present".

Role of MLP: Minerals development can provide skilled jobs within the county and help to increase average household income. A high quality natural environment, including a high quality landscape, has been demonstrated to attract businesses and employees to an area. The MLP, through requiring high-quality restoration of minerals sites, can help to contribute to ensuring the right conditions for attracting investment.

Data sources: Regional Gross Disposable Household Income (GDHI) by Local Authority, Office for National Statistics

Percentage employment rate (working age)

Key data: The table below shows the employment rate in Worcestershire compared to the West Midlands and Great Britain from 2008 to 2017.

Table A3.34: Employment rate in Worcestershire, the West Midlands and Great Britain, 2008-09 to 2017-18

	Oct 08-Sep 09	Oct 09-Sep 10	Oct 10-Sep 11	Oct 11-Sep 12	Oct 12-Sep 13	Oct 13-Sep 14	Oct 14-Sep 15	Oct 15-Sep 16	Jul 16-Jun 17	Apr 17-Mar 18
Bromsgrove	80.8	77.8	71.5	75.1	80.5	79.4	78.4	76.7	81.5	78.6
Malvern Hills	73.8	74.4	71.4	74	77.5	81.1	76.2	67.4	75.4	71.8
Redditch	70.8	72.3	70.9	84.3	74.9	78.3	74.4	75	75.5	83.0
Worcester	78.9	75.8	66.5	71.7	77	78.3	79.1	79.4	81.2	78.1
Wychavon	79.9	78.9	76.8	75.3	78	75.3	81.8	80.5	85.0	77.2
Wyre Forest	65.8	73.3	73.2	73.6	75.6	72.4	73.8	72.4	74.2	78.8
Worcestershire	75.2	75.6	71.9	75.5	77.2	77.2	77.6	75.9	79.3	78.0
West Midlands	68.5	67.9	67	68	68.8	69.6	70.7	71	76.0	67.2
Great Britain	71	70.3	69.9	70.4	71	72.2	73.4	73.9	78.3	75.0

Table A3.35: Worcestershire's employment and unemployment rates relative to neighbouring counties/unitary authorities (April 2017 to March 2018)

	Employment rate (%)	Unemployment rate (%)
Shropshire	77.7	3.2
Staffordshire	79.7	3.2
Warwickshire	81.1	3.3
Herefordshire	79.6	3.1
Worcestershire	78.0	3.5
Solihull	76.2	4.3
Dudley	70.3	5.8
Birmingham	64.4	7.8

Between April 2017 and March 2018 the employment rate for working age people in Worcestershire was 78.0%, which is a decrease from the prior period of July 2016 to June 2017, when the rate was 79.3%.

The employment rate in Worcestershire is better than both the national and regional averages.

Likely evolution: The likely direction of performance is unclear at this stage, and will be governed to a large extent by national and global economic conditions. The outcome of Brexit negotiations will most likely have an impact on employment and unemployment rates in Worcestershire; however it is uncertain at this time.

Role of MLP: Mineral operations do not tend to have high levels of employment, but a limited role for the MLP has been identified, through helping to maintain a high quality environment to attract investment.

Data sources:

Worcestershire Local Economic Assessment, 2018

Worcestershire County Economic Summary, September 2018

Local labour market indicators by unitary and local authority (LI01) April 2017 to March 2018

GVA per hour worked in Worcestershire

Key data: GVA per hour worked for Worcestershire is £29.40.

GVA per hour worked for the West Midlands is £28.30.

GVA per hour worked for England is £33.10.

Since 2011 GVA per hour worked has grown faster in Worcestershire than regionally, nationally or when compared with the county's three Nearest Neighbours.

The Minerals and Waste Authority Monitoring Report records the increase in GVA in Worcestershire from waste management and minerals (due to the low numbers of people employed in the minerals and waste industry, both sectors are combined).

Table A3.36: GVA from Waste Management and Minerals

	2014	2015	% change (2010-2015)
Minerals development GVA* (£m)	4	6	+100%
Waste management GVA (£m)	237	244	+116%
Worcestershire GVA (£m)	11,516	11,796	+21%
% contribution from minerals	0.03%	0.05%	
% contribution from waste management	2.1%	1.9%	

* The following sectors are included: 07: Mining of metal ores; 08: Other mining and quarrying; 09: Mining support service activities; 37: Sewerage; 38: Waste collection, treatment and disposal activities; materials recovery; and 39: Remediation activities and other waste management services. This division includes the provision of remediation services, i.e. the cleanup of contaminated buildings and sites, soil, surface or ground water.

The GVA from waste management and minerals is only a small part of Worcestershire's GVA, but this increased between 2014 and 2015. Furthermore the waste sector continues to grow, with a 2.95% growth between 2014 and 2015 compared to a 2.4% growth in the overall Worcestershire economy in the same timeframe. In regard to mineral development, actual GVA has doubled between 2010 and 2015 from 3 to 6 million pounds. The growth in the minerals sector has occurred faster than the overall growth of GVA in Worcestershire, which grew by 21% in the same timeframe.

Likely evolution: The likely evolution is unclear at this stage.

Role of MLP: The MLP can help to continue the upward trend in GDP arising from mineral and waste sectors through guiding new development to bring wealth into Worcestershire.

Data sources: Worcestershire Local Economic Assessment, 2018

Worcestershire Minerals and Waste Development Framework, Authority Monitoring Report April 2015 to December 2015

Provision of Housing

New affordable homes built

Key data: Some 728 affordable homes were built in Worcestershire during 2016/17.

Table A3.37: Affordable housing completions by district, 2007/08–2016/17

Area	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Bromsgrove	63	31	98	65	157	50	52	12	114	165
Malvern Hills	20	72	91	78	115	8	53	95	117	90
Redditch	78	10	144	63	Unkno wn	Unkno wn	Unkno wn	168	48	81
Worcester	88	147	82	13	114	65	100	120	257	84
Wychavon	64	47	0	57	57	154	258	257	217	191
Wyre Forest	84	99	75	29	29	60	163	148	63	117
Worcester-shire	397	406	490	305	472	337	679	800	816	728

Likely evolution: The likely direction of performance is unclear at this stage. Affordable housing has traditionally been delivered through agreements with developers of market housing schemes. Changing market conditions have meant that, as market housing completions have fallen, so too have affordable homes. National policy has led to many agreements being renegotiated, with affordable housing requirements being relaxed. It is unclear whether government support for affordable housing will offset this loss from traditional sources.

Role of MLP: In making adequate provision for aggregates, the MLP can make sure that local materials are available for the provision of new homes. With lower transport costs, viability of affordable homes could potentially be improved.

Data sources:

District Authority Monitoring Reports

MHCLG (2018) Live Tables on Affordable Housing Supply, Table 1011: additional affordable housing supply, detailed breakdown by local authority, available at:

<https://www.gov.uk/government/statistical-data-sets/live-tables-on-affordable-housing-supply> Accessed 15/10/18

Participation by All/Responsibility

Waste Core Strategy consultation response rates

Key data: Response rates are lower in later stages of the development of the Waste Core Strategy than at earlier stages. There could be two alternative explanations for this:

Front-loading of the process may have been effective and stakeholders may be satisfied that their concerns have been addressed at an early stage. Stakeholders may be suffering consultation fatigue. The Statement of Community Involvement was updated in February 2015. No information was available to monitor satisfaction with the Development Plan process/service in the monitoring period, but future consultations will outline the consultation methods used and ask an additional question during the consultation process to establish whether these are satisfactory or whether other methods could be used. Response rates to planning policy consultations were considered adequate.

Likely evolution: The likely direction is unclear at this stage.

Role of MLP: The MLP will aim to front-load the process of plan development and ensure that every consultation stage is meaningful. By providing feedback, consultees will be able to understand that their responses are valued and they will be able to see how they have been taken into account.

Data sources: Worcestershire Minerals and Waste Development Framework Authority Monitoring Report April 2015 to December 2015

Technology, Innovation & Inward Investment

New business enterprises

Key data: In 2017, there were 30,820 local units registered for VAT and/or PAYE in Worcestershire. Although the number of active businesses has increased in Worcestershire by 11% between 2016 and 2017, which is higher than the West Midlands and England, this is a result of the 50% increase in the number of active businesses in Bromsgrove. Other Worcestershire districts saw increases in the number of active business, but at rates below regional and national averages.

Likely evolution: The likely evolution is unclear at this stage.

Role of MLP: There are few independent operators in the minerals industry, and the role of the MLP may be quite limited in this regard. The MLP could consider the opportunities for new enterprise when balancing the benefits of extending existing sites (where there is a benefit for existing operators) against the development of new sites (where it may be easier for new operators).

Data sources: Worcestershire Local Economic Assessment, 2018

Population: Demographics, Learning and Skills

Population

Key data: Population figures taken from the mid-year estimates for the county are presented here. The 2016 mid-year estimates were released in June 2016. The mid-year figures for 2001-2010 are also shown for comparison purposes.

Figures quoted here are for Quinary (5-year) age groups.

Table A3.38: ONS Mid 2016 Population Estimates for Worcestershire County by 5-year Age Group

Worcestershire	Persons
0-4	32,100
5-9	33,200
10-14	31,500
15-19	32,300
20-24	30,900
25-29	33,000
30-34	32,100
35-39	32,700
40-44	36,300
45-49	42,700
50-54	43,600
55-59	38,300
60-64	36,300
65-69	39,400
70-74	31,900
75-79	22,800
80-84	16,800
85-89	10,700
90+	6,400
All Ages	583,100

Source - ONS mid-year estimates, 2016

The 2016 mid-year estimate for the county was 583,100. This compares with the 2001 estimate of 542,200, the 2009 mid-year estimate of 556,500 and the 2010 mid-year estimate of 557,400. The population of Worcestershire is tending to increase, at an average rate of 1,700 per annum over this 9-year period.

In 2011 there were an estimated 114,954 children in Worcestershire, representing over 20% of the total population. The number of people aged 65-plus in the county is 109,087, representing over 19% of persons.

Table A3.39: ONS Mid 2016 Population Estimates

District	Total Population
Bromsgrove	96,800
Malvern Hills	76,100
Redditch	85,000
Worcester	102,300
Wychavon	122,900
Wyre Forest	99,900
Worcestershire	583,100

Figure A3.12: Projected total persons in Worcestershire 2010 - 2035

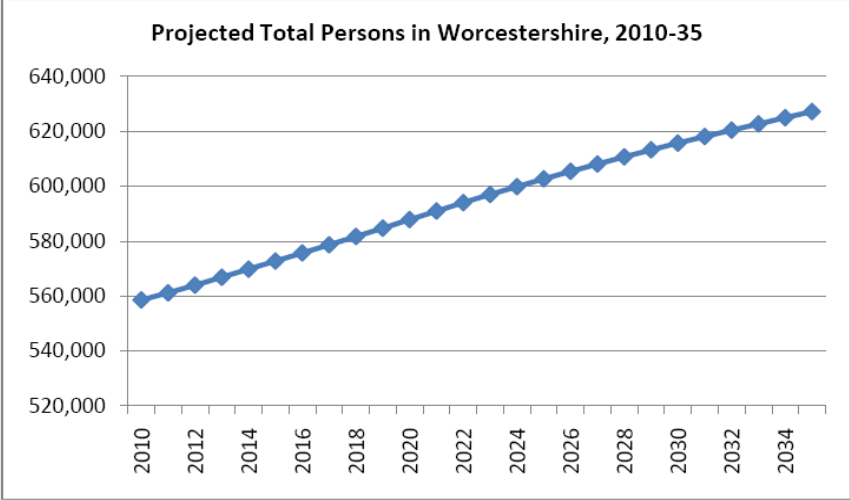


Table A3.40: DCLG, Household Projection by District (thousands)

	2023	2026	2028	2033
Bromsgrove	43	44	45	47
Malvern Hills	36	37	38	39
Redditch	36	37	37	38
Worcester	44	45	46	47
Wychavon	56	57	58	60
Wyre Forest	47	48	49	50

Source: DCLG Household Projection by district, England, 1991-2033

Likely evolution: Latest population projections shown above demonstrate that the number of households in Worcestershire is expected to increase over the timeframe of the Minerals Local Plan. According to the BIS report referred to below, this population increase will lead to "more competition for land use and more demand for mineral-based products, particularly construction minerals for housing and associated infrastructure". The BIS report estimates that an average house needs 400 tonnes of aggregate. Across Worcestershire, the increase in households between 2013 and 2033 would be 38,000, equating to an aggregate requirement of 15,200,000 tonnes. This is before any associated business and infrastructure development which will accompany the new homes.

Role of MLP: The MLP has a major role to play in supporting Worcestershire's growing population. This means ensuring a sufficient proportion of minerals production to allow the homes, offices, factories, commercial and leisure buildings and attendant infrastructure to be built.

Data sources:

Population Statistics for Worcestershire County 2016

BIS: Digging the backyard: Mining and quarrying in the UK and their impact on future land use, Land Use Policy Journal, 2009

DCLG, Household Projection by district, England, 1991-2033

2011 Census, Age Structure, Nomis (official labour market statistics)

Population: Anti-Social Behaviour & Crime; Litter; Graffiti

Perceptions of anti-social behaviour

Key data: The Worcestershire Viewpoint Survey 2017 asked about a range of anti-social behaviour types and how much of a problem the community perceives these to be within their local area. With the exception of people being drunk/rowdy in public places, the perception of all other anti-social behaviours has increased slightly since 2016. Statistically significant increases have been seen only in perception of noisy neighbours and of vandalism/graffiti. The issue with rubbish and litter lying around in public spaces remains the top issue across Worcestershire, as it has been since 2013.

Concern about anti-social behaviour in Worcestershire is relatively minimal, and is beneath both the regional and the national averages.

Likely evolution: The likely direction of performance is unclear at this stage.

Role of MLP: The MLP could take this into account and develop policies to ensure that sites are secure during the operation stage and do not become a focus for anti-social behaviour when restored. In other counties some restored sites with bird hides, etc. have attracted under-age drinkers/drug users or have experienced raves etc.

Data sources:

Worcestershire Viewpoint Survey, Analysis of Results, October 2017

Appendix 4

How Strategic Corridors and Areas of Search Have Been Appraised

1: Landscape

The SA identifies which landscape type(s)⁴ and land cover parcel(s)⁵ each spatial option falls within, and uses the 'landscape type profiles'⁶ to identify the respective landscape guidelines. The guidelines specify the type of features that should be conserved, enhanced, and promoted, and provide an indication of the mitigation/restoration works that may be appropriate within that landscape.

The SA identifies, through GIS searches, any landscape designations that could be affected by the development of the spatial option. A distance threshold of 1.5km is used as a guide, although there is no absolute threshold over which an impact may or may not be significant, as this will depend on a range of factors, such as topography, screening, intervisibility between the minerals spatial option and the landscape designation. Landscape designations in this context are Areas of Outstanding Natural Beauty (AONBs).

The landscape and visual impact of proposals on receptors has also been considered. These receptors include (but are not limited to) houses, employment, and leisure locations, public rights of way, and highways. Potential future development is also identified where possible, as the amenity of future occupiers must be considered. The SA considers the distance to identified potential receptors, taking into account any physical features and existing or proposed development that would serve to block views or otherwise mean that the landscape character had already been altered.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 1: Landscape:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Be within or adjacent to an AONB	--
Have significant visual impact on a number of sensitive receptors (residential areas, public rights of way and areas for outdoor leisure/recreation)	
Be incompatible with all or most of the relevant landscape type characteristics	
Be within 1.5km of an AONB	-
Have negative visual impacts on one or more sensitive receptors (residential areas, public rights of way and areas for outdoor leisure/recreation)	
Be incompatible with one or more of the relevant landscape type characteristics	
Have negligible or no impact on landscape and/or visual impact	0
N/A as will depend on specific restoration techniques which are unknown at this stage	+
N/A as will depend on specific restoration techniques which are unknown at this stage	++
Have an unknown impact on landscape and visual impact	?

⁴ Landscape Types represent various combinations of visually prominent attributes. There are 22 rural landscape types within Worcestershire (Worcestershire County Council (2012) Landscape Character Assessment Supplementary Guidance).

⁵ Land Cover Parcels (LCPs) are the smallest units of landscape. They are individual, unique areas with their own identity and character (Worcestershire County Council (2012) Landscape Character Assessment Supplementary Guidance).

⁶ http://www.worcestershire.gov.uk/downloads/download/808/worcestershire_landscape_type_profiles

2: Biodiversity and geodiversity

A GIS search has been used to identify relevant designations within or in close proximity to spatial options (Special Areas of Conservation, Sites of Special Scientific Interest, Local Wildlife Sites, Local Geological Sites, and areas of Ancient Semi-Natural Woodland). There is no absolute distance threshold between a spatial option and a designation that signifies a particular scale and likelihood of impact, as this will depend on the particular characteristics of the designated site and the pathways between the impacts and receptors, which may be hydrological, airborne, etc. All designated sites within 1.5km of spatial options have been identified. As stated above, the 1.5km is not an absolute threshold, but in most cases it is unlikely that impacts beyond this distance would be significant, and would depend on obvious connectivity.

The SA has also been informed by the findings of the Habitat Regulations Assessment, which considers European nature conservation sites.

For a strategic appraisal such as this one, it has not been possible to identify habitats at a finer grain of detail (such as BAP-quality habitat distribution). Similarly, those high-level assets that have been identified do not represent the entirety of any given resource; as an example, only those ancient woodlands that are 2Ha or more in size have been identified, but this does not mean that smaller woodlands are not important. This finer grain of detail should be considered as and when any proposals are being drawn up and should be taken into account in the development control process.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 2: biodiversity and geodiversity:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Contain or be within 1.5km of a European site, and/or a national biodiversity or geodiversity site	--
Have potential for likely adverse effects on the integrity of a European site or underlying SSSI, as identified in the HRA	
Contain a locally designated biodiversity or geodiversity site	-
Be within 1.5km of a locally designated biodiversity or geodiversity site	
Have negligible or no impact on biodiversity or geodiversity due to distance from designated sites	0
N/A as will depend on specific restoration techniques which are unknown at this stage	+
N/A as will depend on specific restoration techniques which are unknown at this stage	++
Have an unknown impact on biodiversity and geodiversity	?

3: Cultural heritage, architecture and archaeology

GIS has been used to identify statutorily-listed buildings and scheduled monuments, and the details of their listing grade are recorded. It is noted that heritage assets are finite resources that cannot be replaced if lost or damaged by development. As a general guide, a distance of 1.5km has been used to identify receptors, but it is recognised that some heritage assets may have extensive settings far beyond this threshold. The majority of Worcestershire's historic environment assets are not nationally-listed, but appear on the county Historic Environment Record, and it is this record which may provide the best indicator of the historic environment potential. This finer grain of detail has not been considered in this SA, but should inform any specific proposals. It is also recognised that any part of the county could contain archaeological features, which could be exposed or damaged through minerals development. Whilst such considerations are outside the scope of the SA, specific proposals should consider the potential archaeology of the area.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 3: Cultural heritage, architecture and archaeology:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Contain or lie adjacent to a national historic environment site	--
Significantly compromise a historic environment asset through inter-visibility or clear impacts on setting through other disturbance. (This will be appraised through a desk-based assessment and therefore will be uncertain as actual effects will depend on actual inter-visibility which cannot be determined at this strategic scale using desk-based assessment.)	
Contain or lie adjacent to a Conservation Area and its setting or within 1.5km locally important historic park and garden	-
Have negligible or no impact on cultural heritage, architecture and archaeology, due to distance from historic environment assets	0
N/A as will depend on specific restoration techniques which are unknown at this stage	+
N/A as will depend on specific restoration techniques which are unknown at this stage	++
Have an unknown impact on cultural heritage, architecture, and archaeology	?

4: Material assets

The appraisal of strategic corridors and preferred areas considers the quality of agricultural land that could be affected. The appraisal of broader policies has looked at the degree of protection offered to agriculture, including how far it is supported through approaches to determining planning applications and guiding restoration. Where it is not possible to distinguish between grade 3a and grade 3b agricultural land, the precautionary principle is adopted and it is assumed that some grade 3a land may potentially be lost, at least in the short to medium term. This uncertainty has been recognised in the assessments.

Green Belt is considered as a material asset in this assessment in line with its five purposes, as set out in the NPPF. Note that Green Belt is a policy designation, rather than a landscape or other sustainability designation. The landscape elements of the Green Belt are considered under SA objective 1: Landscape.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 4: material assets:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Lead to the loss of Grade 1 agricultural land	--
Lead to the loss of Grade 2 or 3 agricultural land	-
Lead to mineral extraction sites within the Green Belt	-
Have negligible or no impact on material assets	0
Lead to mineral extraction sites on previously-developed land (<50% of the spatial option)	+
Lead to mineral extraction sites on previously-developed land (≥50% of the spatial option)	++
Have an unknown impact on material assets	?

5: Natural resources

The appraisal has considered how the MLP's approach to guiding development and restoration could affect water quality, and has also looked at how the spatial elements (strategic corridors, areas of search) relate to known areas of water quality concern, such as Source Protection Zones.

The appraisal has also considered how far the MLP seeks to protect and enhance air quality through policies to guide the location and operation of development. The location of Air Quality Management Areas has been identified, and the potential impacts that the MLP's strategic spatial options could have on related AQMAs has been considered.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 5: natural resources:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Be within any part of a Source Protection Zone 1	--
Be within any part of an AQMA	
Include or be adjacent to a waterbody or sensitive receptors (schools, residential areas, hospitals, faith centres, outdoor leisure and recreation facilities).	
Be within any part of Source Protection Zones 2 or 3	-
Potentially impact negatively on an AQMA through operations or transport	-
Have negligible or no impact on natural resources	0
N/A as will depend on specific restoration techniques which are unknown at this stage	+
N/A as will depend on specific restoration techniques which are unknown at this stage	++
Have an unknown impact on natural resources	?

6: Climate change and energy

The potential climate change effects of the MLP have been considered by looking at the likely impacts on energy use and transport arising from the policy approaches

and specific locations. This has included using GIS to identify potential transport routes that could be used by minerals traffic, including sustainable modes such as water transport. The appraisal has considered how far minerals development may be from potential end users, to understand the likely transport implications. It is outside the scope of the SA to carry out detailed feasibility work into utilising existing rail and water links. The SA has assumed that larger rivers and canals would be suitable, although all positive scores are uncertain as these links would only be suitable if there was deemed to be a reasonable likelihood of the development of necessary infrastructure to access these routes, and this information is unknown. For waterways, it may not be unreasonable to assume that movements by barge would be achievable (although where barges could move to would be governed by known restrictions), as this may simply require an access track to the waterside, a floating pontoon and some loading/unloading equipment. However, accessing railways is far more complex and would require significant investment and agreements to be in place, and far more engineering to achieve access. As such, there will inevitably be a lower likelihood of rail transport being a feasible option unless existing infrastructure is in place or there is strong confidence that it would be delivered in a timescale that matches that of the MLP. For this reason, where potential water links could be available, minor positive uncertain effects have been identified, but it has been assumed that new rail links for minerals sites would not be implemented within the life of the MLP.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 6: climate change and energy:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Be in a location further than 48 kilometres from potential markets (existing built up areas and strategic development allocations)	--
Lead to mineral extraction sites that require the net loss of significant tree cover ($\geq 50\%$ of the spatial option) without compensatory planting	
Require use of heavy fossil-fuelled vehicle haulage (i.e. no suitable water links exist within or adjacent to the spatial option)	-
Have negligible or no impact on climate change and energy	0
Suitable water links exist within or adjacent to the spatial option	+
N/A	++
Have an unknown impact on climate change and energy	?

7: Flooding

Flood maps have been used to identify whether the spatial options overlay any flood zones. Consideration will be given to the MLP's restoration approach, and how far opportunities to improve flood resilience have been adopted, when assessing the relevant policies.

Some mineral extraction sites may hold the potential to store excess water in times of heavy rain, which would be seen as a positive in terms of preventing flood risk. In particular, sand and gravel extraction is considered water compatible. Where minerals extraction is considered water compatible, negligible effects are recorded, as minerals development and associated infrastructure may still have some, minimal, impact on flood risk.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 7: flooding:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
N/A	--
Non-sand and gravel spatial option within flood zone 3	-
Have negligible or no impact on flooding i.e. sand and gravel (including solid sand and gravel, solid sand and silica sand) spatial option (compatible in any flood zone), or for non-sand and gravel spatial options wholly within Flood Zones 1 and/or 2	0
N/A as will depend on specific restoration techniques which are unknown at this stage	+
N/A as will depend on specific restoration techniques which are unknown at this stage	++
Have an unknown impact on flooding	?

8: Access to services

The term "services" is potentially wide-ranging. The SA has sought to bring clarity to the process by assuming that, in most cases, "access to services" means the availability of access routes, i.e. public rights of way, to enable people to reach whatever services they may need (other transport access is considered under the 'Traffic and transport' SA objective). The SA has used GIS to identify how the spatial elements of the MLP could affect rights of way, including bridleways and public footpaths. Where a specific service has also been identified (such as a school or a golf course), this has been recorded.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 8: access to services:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Lead to mineral extraction sites located where one or more Public Rights of Way crosses the site	--
Significantly compromise the ability of people to access health, educational or other key local services by creating a physical barrier to these	--
Lead to mineral extraction sites located where one or more Public Rights of Way is adjacent to the site	-
Have a slight impact on the ability of people to access health, educational or other key local services by removing or diverting a direct route to these	-
Have negligible or no impact on access to services	0
N/A	+
N/A	++
Have an unknown impact on access to services	?

9: Health and amenity

The MLP's approach to health and amenity has been considered by appraising the effect of the policies and spatial approach on a range of potential receptors. The SA has used GIS to identify any nearby land uses, such as homes and schools, which could be susceptible to negative effects from mineral extraction activities and transport. Potential future land uses, namely strategic development allocations, have also been considered, although there is a degree of uncertainty attached to this. National Planning Practice Guidance for Minerals state that residential properties and other sensitive uses can be affected by dust up to 1km from the source, and that additional measures to monitor and control PM₁₀ might be necessary. However, former Annex I of Minerals Policy Statement 2 also stated that concerns about dust are most likely to be experienced near to dust sources, generally within 100m depending on site characteristics and in the absence of appropriate mitigation. Therefore these distances (100m and 1km) have been used within the assumptions for this SA objective.

GIS has also allowed the identification of any spatial options within or in close proximity to Health and Safety Executive consultation zones. The position of any electricity transmission lines is also recorded, where appropriate. The presence of any of these assets does not necessarily make minerals development in the area unsafe, but does identify where further consultation may be required.

Minerals sites are often restored to uses that attract wildlife, such as creation of waterbodies. This can attract birds to the area, which can pose a risk to aviation safety by increasing the risk of bird strike. Various national guidance documents, including the Civil Aviation Authority's Safeguarding of Aerodromes document, explain that 99% of bird strikes occur below 2000 feet, which is commonly reached by aircraft around 13km from the runway. As such, increased bird strike is considered a risk for any minerals sites within 13km of an airport or airfield. Birmingham Airport is the only airport on the government's list of 'officially safeguarded civil aerodromes' that is within 13km of the county, therefore risk of bird strike has only been considered in relation to this airport.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 9: health and amenity:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Cause noise, dust, or other emissions within 100m of sensitive receptors (schools, residential areas, hospitals, faith centres outdoor leisure and recreation facilities)	--
Be within 13km of an officially safeguarded civil aerodrome	
Be within an area through which a electricity transmission line passes	
Cause noise, dust, or other emissions within 100m or less sensitive receptors (industrial areas, transport corridors etc.)	-
Have negligible or no impact on health and amenity	0
N/A as will depend on specific restoration techniques which are unknown at this stage	+
N/A as will depend on specific restoration techniques which are unknown at this stage	++
Have an unknown impact on health and amenity	?

10: Waste

GIS has been used to identify waste sites and their safeguarded zones (a 250m buffer around the waste sites), and where these interact with spatial options. Minerals development could adversely affect waste site operations, by limiting operation and expansion of the waste site. Minerals development and waste sites in close proximity could have cumulative negative effects on a range of sustainability factors, including traffic levels and associated emissions and health and amenity.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 10: waste:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
N/A	--
Contain or be within 250m of existing waste infrastructure	-
Have negligible or no impact on waste	0
N/A	+
N/A	++
Have an unknown impact on waste	?

11: Traffic and transport

The appraisal of traffic and transport considers how far the MLP identifies and supports potential alternatives to road transport. The appraisal has used GIS to identify potential transport options. As explained for SA objective 6: climate change and energy, suitable rail links are considered unlikely to come forward in the lifetime of the plan.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 11: traffic and transport:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Be further than 5km from the strategic road network	--
Have a minor negative impact on traffic and transport, for example by requiring road-based movement by HGVs, with no realistic likelihood of more sustainable means of transport, but within 5km of the strategic road network	-
Have negligible or no impact on traffic and transport	0
Suitable water links exist within or adjacent to the spatial option	+
N/A	++
Have an unknown impact on traffic and transport	?

12: Growth with prosperity for all

The appraisal considers how far the MLP's approach supports the minerals industry, and in turn enables wider economic development objectives to be met. The amount of minerals the MLP makes provision for has been examined, to ensure that unnecessary constraints on supply do not threaten growth and infrastructure. The potential for mineral sites to prevent other development coming forward has been identified.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 12: growth and prosperity for all:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Contain or lie adjacent to an area allocated for employment development or proposed infrastructure delivery	--
Be within 250m of an area allocated for employment development or proposed infrastructure delivery	-
Have negligible or no impact on growth with prosperity for all	0
Provide new employment opportunities (all options)	+
N/A	++
Have an unknown impact on growth with prosperity for all	?

13: Provision of housing

The appraisal considers how far the MLP's approach supports housing development by providing sufficient minerals to enable construction not just of housing, but of the associated infrastructure to ensure housebuilding occurs in clean, safe and pleasant environments. The main focus of the appraisal for this SA objective is therefore on where existing and potential housing sites could be supported or compromised by minerals extraction close by.

Sand and gravel and brick clay are the minerals considered most likely to contribute to housebuilding, although crushed rock is also likely to be required for associated land uses, such as roads. It is noted that recycled materials may also be used in housebuilding. It is also likely that changing construction practices will result in changes to demand in different materials in future, such as declining use of 'common bricks', although there is remaining uncertainty about this.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 13: provision of housing:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
Contain or lie adjacent to an area allocated for the provision of housing	--
Be within 250m of an area allocated for the provision of housing	-
Have negligible or no impact on the provision of housing	0
Be worked for sand and gravel, brick clay and crushed rock	+
Have a significant positive impact on the provision of housing	++
Have an unknown impact on the provision of housing	?

14: Participation by all

The locations of strategic corridors and areas of search will not affect the ability of communities to participate in decisions regarding minerals development, as this will be influenced by and assessed in relation to policies in the MLP.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 14: participation by all:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
N/A	--
N/A	-
Have negligible or no impact on participation by all	0
N/A	+
N/A	++
N/A	?

15: Technology, innovation and inward investment

The locations of strategic corridors and areas of search will not affect new technologies and innovation, as this will be influenced by and assessed in relation to policies in the MLP. In addition, data on the locations of sites for innovative technologies (e.g. solar farms or other resource efficient technology) is not available.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 15: technology, innovation and inward investment:

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
N/A	--
N/A	-
Have negligible or no impact on technology, innovation and inward investment	0
N/A	+
N/A	++
N/A	?

16: Population (skills and education)

Although exposure of geological features through minerals extraction can provide research and education opportunities, the potential to provide such educational opportunities is not dependent on the location of mineral workings. The locations of strategic corridors and areas of search will not affect skills and education. Effects on facilities such as schools via noise and visual disturbance are assessed via other objectives.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 16: population (skills and education):

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
N/A	--
N/A	-
Have negligible or no impact on skills and education	0
N/A	+
N/A	++
N/A	?

17: Population (crime & fear of crime)

The locations of strategic corridors and areas of search will not affect crime and the fear of crime.

Thresholds to guide decision-making for the appraisal of spatial options in relation to SA objective 17: population (crime and fear of crime):

Minerals extraction within the strategic corridor or area of search will, or is likely to ...	SA rating
N/A	--
N/A	-
Have negligible or no impact on crime & fear of crime	0
N/A	+
N/A	++
N/A	?

Appendix 5

Appraisal Matrices for Policies

Strategic Policies

Policy MLP 1: Strategic Location of Development

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	<p>+/--?</p>	<p>The strategic corridors specifically exclude the Cotswolds and Malvern Hills AONBs (although the potential for negative effects to occur through impact on setting must also be taken into account in site-specific proposals). The corridors have been determined, to a large extent, by the coherence of their landscape types. Due to their size, all of the corridors contain parts of nationally and/or locally designated parks and gardens, although a greater number of such assets lie outside the corridors than within them. The landscape and visual impacts of a proposal will vary according to that proposal's specific location, and the corridors introduced by this policy are too large to enable any specific impacts to be identified. Guiding development to locations where the opportunities for landscape safeguarding and strengthening – especially (but not exclusively) occurring post-restoration – will have the greatest benefit, mean that this policy should help to foster this SA objective.</p> <p>The addition of criterion 'c' is in response to the third stage consultation where CPRE requested that mineral sites should be able to be worked outside of the strategic corridors for heritage and environmental reasons. As this mineral provision could be developed outside of the strategic corridors, mineral developments could be located within or close proximity to the Cotswolds and Malvern Hills AONBs. Although, minerals development coming forward under criterion 'c' is likely to be infrequent and small-scale, in line with the strategic corridor and areas of search assumptions outlined in Appendix 4 of this Fourth Stage SA Report, a significant negative effect is identified on this SA objective⁷. However this is uncertain as the effects would be dependent on the location and scale of the mineral site coming forward outside of the strategic corridors, which are unknown at this stage.</p> <p>Overall a mixed significant negative uncertain and minor positive effect is identified on this SA objective.</p>

⁷ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+/--?	<p>The strategic corridors include designated and non-designated biodiversity and geodiversity assets, but these are also spread throughout the county; the corridors are too large to enable specific impacts on specific receptors to be appraised. The corridors do not include either of the county's two SACs. Guiding development to locations where opportunities for biodiversity and geodiversity conservation and enhancement – especially (but not exclusively) occurring post-restoration – will have the greatest benefit, should mean that the policy will foster this SA objective.</p> <p>The addition of criterion 'c' is in response to the third stage consultation where CPRE requested that mineral sites should be able to be worked outside of the strategic corridors for heritage and environmental reasons. As this mineral provision could be developed outside of the strategic corridors, mineral developments could be located within or adjacent to the county's two SACs. Although, minerals development coming forward under criterion 'c' is likely to be infrequent and small-scale, in line with the strategic corridor and areas of search assumptions outlined in Appendix 4 of this Stage Four SA Report, a significant negative effect is identified on this SA objective⁸. However this is uncertain as the effects would be dependent on the scale and location of the mineral site coming forward outside of the strategic corridors, which are unknown at this stage.</p> <p>Overall a mixed significant negative uncertain and minor positive effect is identified for this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/--?	<p>There are a range of historic environment assets within the corridors, but equally there are assets outside the corridors, and therefore there is potential for mineral development sites to come forward within or adjacent to a national historic environment site and/or to significantly compromise a historic environment asset through inter-visibility or clear impacts on setting through other disturbance. Therefore to align with the strategic corridor and areas of search assumptions outlined in Appendix 4 of this Stage Four SA Report, a significant negative effect is identified on this SA objective⁹. However this is uncertain as the effects are dependent on the specific location of any mineral development site coming forward, which is unknown at this stage.</p> <p>Although the historic environment forms a part of green infrastructure, it has not been instrumental</p>

⁸ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

⁹ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>in guiding the location of the strategic corridors, nor in the approach to restoration within them. Each corridor has a table showing the contribution of each corridor's priorities to the various aspects of green infrastructure, and there is only ever a "potential positive contribution" to the historic environment within every part of every corridor. Landscape-scale restoration can help to improve the setting of the historic environment, and there are close linkages between landscape character and historic landscape character. Therefore, there may also be a minor positive effect in relation to this SA objective, which results in a mixed minor positive and significant negative uncertain effect.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	<p>++/--?</p>	<p>Agricultural land quality varies across the corridors, and the corridors do not specifically seek to avoid best and most versatile agricultural land. Nor do they threaten it unduly. Those corridors in the north of the county all include Green Belt land, whilst those in the south do not. While most minerals development is unlikely to be inappropriate in the Green Belt, some aspects could be, and this needs to be taken into account. However there is potential for mineral development to come forward that could lead to the loss of Grade 1 agricultural land, therefore a significant negative uncertain effect is expected, in line with the strategic corridor and areas of search assumptions outlined in Appendix 4 of this Stage Four SA Report. Conversely, there is also potential for mineral extraction sites to come forward that lie on previously developed land, and so a significant positive effect is also identified in accordance with Appendix 4.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	<p>--?</p>	<p>The northern corridors include almost all of the county's Source Protection Zones. This does not mean that these will be affected by minerals development within these corridors, and other MLP policies should help to ensure that water quality is protected. Nevertheless, if all else was equal, development would ideally be directed away from these potentially sensitive receptors. As there is potential for mineral development sites to come forward within any part of a Source Protection Zone, within a strategic corridor (or outside, as allowed by criterion 'c') a significant negative effect is identified on this SA objective, in line with the strategic corridor and areas of search assumptions outlined in Appendix 4 of this Stage Four SA Report¹⁰. However this is uncertain as the effects are dependent on the location and scale of any mineral development sites coming forward which are unknown at this stage.</p> <p>Water quality, however, is one of the green infrastructure aspects that could be enhanced through</p>

¹⁰ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>appropriate minerals development and restoration, and the corridors will direct not only development, but also restoration gains; water quality improvements are specifically sought within some of the strategic corridors through the corridor-specific policies (appraised separately).</p> <p>The corridors include or are close to all of the county's Air Quality Management Areas. Similarly, where a mineral development is delivered through criterion 'c' of this policy it may be located within an AQMA and in line with Appendix 4, a significant negative effect is identified. However, this is uncertain as the effects are dependent on the location and scale of any mineral development sites coming forward which are unknown at this stage.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	<p>+?/-?</p>	<p>The corridors have been identified through the MLP as the areas where the greatest green infrastructure gains can be realised. The exact climate change impacts of minerals development can only be predicted once the location and detail of workings is known. The corridors are too large to enable any meaningful appraisal of specific impacts to be made. The climate change effects will depend upon working practices and transport modes. The corridors are, in very broad terms, close to major rivers, which could provide opportunities for sustainable transport movements, therefore resulting in minor positive effects. Equally, the corridors include areas that are less accessible to the strategic transport network and water links, and the policy could lead to minerals development outside of these corridors, in areas with even more limited access to transport links. This could see transport emissions increase, thereby exacerbating climate change and resulting in minor negative effects. As mineral provision could also be developed outside of the strategic corridors, the green infrastructure mitigation measures specified for the strategic corridors, may not be delivered.</p> <p>Overall a mixed minor negative uncertain and minor positive uncertain effect is identified on this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other</p>	<p>-?</p>	<p>The strategic corridors include significant areas of flood zones 2 and 3, but this is to be expected, as much of the sand and gravel resource is associated with river terraces. Overall, it is considered unlikely that the policy itself will have significant effects on this SA objective, as many aspects of minerals development will not be "inappropriate" in these zones. However as there is potential for non-sand and gravel spatial options to be located in flood zone 3, a minor negative effect is identified</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
areas.		on this SA objective. This SA score is consistent with the assumption set out in Appendix 4 of this SA Report ¹¹ . However, as the effects are dependent on the location of the mineral sites, which is unknown at this stage, an uncertain effect is identified.
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+/--?	Public rights of way extend across the county in all areas, inside and outside the corridors. Minerals development within the corridors could both threaten existing routes (although mitigation elsewhere in the plan should limit this), and improve them as part of green infrastructure enhancements during development and restoration (giving a minor positive effect). The policy would support planning permission for mineral extraction sites that could potentially be located where one or more Public Rights of Way crosses the site. In line with the assumptions set out in Appendix 4, a significant negative effect is identified on this SA objective ¹² . However, the negative effect is uncertain as effects are dependent on the location, scale and type of mineral site that comes forward, which are unknown at this stage.
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+/--?	A variety of health impacts could arise as a result of minerals development. In the short term, effects may generally be expected to be negative, although the MLP will mitigate these through other policies. In the longer term, the MLP's approach of seeking green infrastructure improvements should have indirect minor positive effects on health, which can be closely linked to GI (for example through the improved quantity of and/or accessibility to green space). Comparing the corridors against a map of high-level health indicators ¹³ demonstrates no particular linkages. However, there is potential for mineral extraction sites (within strategic corridors, or outside if taken forward through criterion 'c') to be worked through this policy which could potentially cause noise, dust, or other emissions within 100m of sensitive receptors ¹⁴ . In accordance with Appendix 4, a significant negative effect is identified ¹⁵ . However, the negative effects are uncertain as they depend on the location, scale and operation of the mineral site which is unknown at this stage.

¹¹ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

¹² No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

¹³ Worcestershire Green Infrastructure Partnership (2014) Worcestershire Green Infrastructure Framework 4: Socio-economic benefits of green infrastructure, A map of GI related health indicators – combined map.

¹⁴ Schools, residential areas, hospitals, faith centres outdoor leisure and recreation facilities.

¹⁵ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	-	<p>If a minerals development is located within close proximity of an existing or allocated waste management infrastructure, it could compromise the operation of the waste management facility. There are a number of waste management facilities within the county and within the strategic corridors, and as such, a mineral development site could be located within 250m of a waste management facility.</p> <p>In addition, this policy promotes the use of primary mineral extraction rather than encouraging the use of secondary minerals.</p> <p>A minor negative effect is therefore identified.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+?/--?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. Although the type, location, and use of such minerals is currently unknown, the policy provides for these minerals within the county, which may prevent the need to import such minerals from outside the county, thereby reducing transport movements. The precise nature of any benefits on traffic and transport will depend upon where such minerals are found inside and outside the county in relation to their markets, but it is reasonable to assume that delivering supplies to Worcestershire from within Worcestershire will support this SA objective.</p> <p>Within Worcestershire itself however, a minor positive effect can also be identified as there is potential for mineral development to be located within close proximity to rail and water links, although this is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination. In contrast, there is also potential for mineral sites to come forward that are located further away from a strategic road network, including development outside of the strategic corridors, and so a significant negative effect is also identified. However the negative effects are uncertain as they will be dependent on the location and scale of the mineral site which is unknown at this stage.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+/--?	<p>This policy aims to grant planning permission to mineral sites within strategic corridors (and outside mineral corridors if taking forward criterion 'c'). As new sites and extensions to existing sites will provide new job opportunities, a positive effect is identified on this SA objective.</p> <p>In contrast, where a potential mineral site or extension is identified on land allocated for employment development or proposed infrastructure delivery (e.g. dualling of Worcester's Southern Link road and</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>Worcestershire Parkway Station), this would conflict with other employment opportunities, so a significant negative effect is expected. However, the effects are dependent on the location of the mineral site which is unknown at this stage, hence the uncertain effect identified.</p> <p>The minor positive and significant negative uncertain effects are consistent with the assumptions set out in Appendix 4 of this SA Report.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+/--?	<p>This policy aims to grant planning permission to mineral sites within strategic corridors (and outside mineral corridors if taking forward criterion 'c'). As new sites and extensions to existing sites will contribute to housebuilding and other infrastructure such as roads, a minor positive effect is identified.</p> <p>Conversely, there is potential for mineral development to be permitted on areas of land allocated for housing provision through this policy, so a significant negative effect is also identified. However, the effects are dependent on the location of the mineral site which is unknown at this stage, hence the uncertain effect is identified.</p> <p>The minor positive and significant negative uncertain effects are consistent with the assumptions set out in Appendix 4 of this SA Report.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	<p>The locations of strategic corridors and areas of search referred to in this policy will not affect the ability of communities to participate in decisions regarding minerals development.</p>
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	<p>The locations of strategic corridors and areas of search referred to in this policy will not affect new technologies and innovation.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.</p>	0	<p>Although exposure of geological features through minerals extraction can provide research and education opportunities, the potential to provide such educational opportunities is not dependent on the location of mineral workings. The locations of strategic corridors and areas of search referred to in this policy will not affect skills and education. Potential effects of minerals development on facilities such as schools from noise or visual disturbance are assessed under other SA objectives.</p>
<p>SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.</p>	0	<p>The locations of strategic corridors and areas of search referred to in this policy will not affect crime and the fear of crime.</p>

Policy MLP 2: Borrow pits

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+/-?	<p>The policy enables the working of borrow pits which could be located outside of strategic corridors and areas of search, therefore through this policy borrow pits could be located within or in close proximity to either the Cotswolds or Malvern Hills AONBs and as set out in Appendix 4 a significant negative effect could be identified. However, criterion 'a' of the policy specifies that the borrow pit must be used in connection with a specific project and criterion 'c' states that the mineral extraction is to be limited to the life time of the specific project, therefore the effects will be generally small scale and short term. As such the significant effect is reduced to a minor negative effect.</p> <p>Criterion 'd' considers the borrow pit's restoration which should deliver local green infrastructure enhancements. This provision can safeguard and strengthen landscape character. Furthermore, criterion 'e' requires the borrow pit to be restored to an 'appropriate landform at the earliest opportunity'. As such, a minor positive effect is also identified.</p> <p>However as the effects are dependent on the location of the borrow pit which is unknown at this stage, the negative effect identified is uncertain.</p> <p>Overall a mixed minor positive and minor negative uncertain effect is identified on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+/-?	<p>The policy enables the working of borrow pits which could be located outside of strategic corridors and areas of search, therefore through this policy borrow pits could be located within or close proximity to either of the SACs and as set out in Appendix 4 a significant negative effect could be identified. However, criterion 'a' of the policy specifies that the borrow pit must be used in connection with a specific project and criterion 'c' states that the mineral extraction is to be limited to the life time of the specific project, therefore the effects will be generally small scale and short term. As such the significant effect is reduced to a minor negative effect.</p> <p>Criterion 'd' considers the borrow pit's restoration which should deliver local green infrastructure enhancements. This provision can conserve and enhance the biodiversity network. As such, a minor positive effect is also identified.</p> <p>However as the effects are dependent on the location of the borrow pit which is unknown at this stage, the minor negative effect is uncertain.</p> <p>Overall a mixed minor positive and minor negative uncertain effect is identified on this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/-?	<p>The policy enables the working of borrow pits which could compromise a historic asset through inter-visibility or disturbance, and as set out in Appendix 4 a significant negative effect could be identified. However, criterion 'a' of the policy specifies that the borrow pit must be used in connection with a specific project and criterion 'c' states that the mineral extraction is to be limited to the life time of the specific project, therefore the effects will be generally small scale and short term. As such the significant effect is reduced to a minor negative effect.</p> <p>Criterion 'd' considers the borrow pit's restoration which should deliver local green infrastructure enhancements. This provision can mitigate and strengthen a historic asset's setting, so a minor positive effect is also identified.</p> <p>However as the effects are dependent on the location of the borrow pit which is unknown at this stage, the negative effects is uncertain.</p> <p>Overall a mixed minor positive and minor negative uncertain effect is identified on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	++?/--?	<p>The policy enables the working of borrow pits which could be located in the Green Belt. In addition, borrow pits could be located on high grade agricultural land, which would result in a significant negative effect. Although criterion 'a' of the policy specifies that the borrow pit must be used in connection with a specific project and criterion 'c' states that the mineral extraction is to be limited to the life time of the specific project, and the effects will be generally small scale and short term, a significant negative effect is identified as neither of these criteria would mitigate the loss of best and most versatile land.</p> <p>In contrast, there is also potential for this policy to permit borrow pits on previously developed land, so a significant positive effect is also identified.</p> <p>However as the effects are dependent on the location of the borrow pit which is unknown at this stage, an uncertain effect is identified.</p> <p>Overall an uncertain mixed significant positive and significant negative effect is identified on this SA objective.</p>
<p>SA5: Natural Resources</p>	+/-?	<p>The policy enables the working of borrow pits which could be located within any part of a Source Protection Zone, and as set out in Appendix 4 a significant negative effect could be identified.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
Protect and enhance water and air quality.		<p>However, criterion 'a' of the policy specifies that the borrow pit must be used in connection with a specific project and criterion 'c' states that the mineral extraction is to be limited to the life time of the specific project, therefore the effects will be generally small scale and short term. As such the significant effect is reduced to a minor negative effect in relation to water quality.</p> <p>Water quality, however, is one of the green infrastructure aspects that could be enhanced through appropriate restoration which could be delivered through criterion 'd' of this policy, so a minor positive effect is also identified.</p> <p>This policy could deliver a borrow pit within or within close proximity to an AQMA and in line with Appendix 4, a significant negative effect could be identified. However, as above, due to the small scale and short term nature of the effects, these are reduced to minor negative.</p> <p>Because the effects are dependent on the location of the borrow pit which is unknown at this stage, an uncertain effect is identified.</p> <p>Overall a mixed minor positive and minor negative uncertain effect is identified on this SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+	<p>The aim of this policy is to work mineral resources within close proximity of a specified development site though granting permission for borrow pits, rather than using resources from allocated mineral sites. As locally sourced mineral development will reduce transport distances, and criterion 'b' requires the minimal use of highways, a minor positive effect is expected on this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	-?	<p>Overall, it is considered unlikely that the policy itself will have significant effects on this SA objective, as many aspects of borrow pit development will not be "inappropriate" in high flood risk zones and it is unrealistic to seek to exclude them. However as there is potential for non-sand and gravel spatial options to be located in flood zone 3, a minor negative effect is identified on this SA objective. This SA score is consistent with the assumptions set out in Appendix 4 of this SA Report¹⁶. However the effects are dependent on the location of the borrow pit which is unknown at this stage, therefore an uncertain effect is identified.</p>

¹⁶ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+/-?	<p>The policy promotes the working of borrow pits which could disrupt public rights of way. In line with the assumptions set out in Appendix 4, a significant negative effect should be identified on this SA objective¹⁷, however criterion 'b' of the policy states that there must not be 'undue interference with the rights of way network'. As such, the significant negative effect has been reduced and a minor negative effect is identified on this SA objective. This effect is uncertain as the effects are dependent on the location of the borrow pit which is unknown at this stage. Minor positive effects may also be achieved as the policy requires working and restoration of the borrow pit to deliver locally appropriate enhancements to existing green infrastructure networks, which are likely to include rights of way.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+/--?	<p>As the policy enables the working of borrow pits, there is potential for mineral extraction sites to be worked through this policy which could potentially cause noise, dust, or other emissions within 100m of sensitive receptors¹⁸. In line with the assumptions set out in Appendix 4, a significant negative effect is identified¹⁹. However the effects are dependent on the location of the mineral site which is unknown at this stage, so an uncertain effect is identified.</p> <p>Criterion 'a' of the policy specifies that the borrow pit must be used in connection with a specific project and criterion 'c' states that the mineral extraction is to be limited to the life time of the specified project, therefore the effects will be generally small scale and short term. However a significant negative effect is identified as this is unlikely to mitigate the noise, dust and other emissions affecting sensitive receptors. In the longer term, the MLP's approach of seeking green infrastructure improvements should have indirect minor positive effects on health, which can be closely linked to GI (for example through the improved quantity of and/or accessibility to green space).</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling</p>	-	<p>Borrow pit workings are unlikely to have adverse effects on waste management infrastructure. However a minor negative effect is likely as the workings of borrow pits promote the use of primary mineral extraction rather than encourage the use of secondary minerals.</p>

¹⁷ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

¹⁸ Schools, residential areas, hospitals, faith centres outdoor leisure and recreation facilities

¹⁹ No positive effects (significant or minor) are identified for this SA objective in Appendix 4.

Sustainability Appraisal Objectives	SA Score	Potential effects
and composting, 4) recovery, 5) disposal.		
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	++	The aim of this policy is to work mineral resources within close proximity of a specified development site though granting permission for borrow pits, rather than source mineral development from allocated mineral sites. As locally sourced mineral development will reduce transport distances, and criterion 'b' requires the minimal use of highways, a significant positive effect is expected on this SA objective.
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	No effects on this SA objective have been identified.
SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	+	This policy could provide borrow pits that could potentially provide minerals to support housing developments. A minor positive effect is therefore expected on this SA objective.
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No effects on this SA objective have been identified.
SA15: Technology, innovation and inward investment Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
environmental technology initiatives.		
SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.	0	No effects on this SA objective have been identified.
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No effects on this SA objective have been identified.

Policy MLP 3: Green Infrastructure

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	++	<p>Part (d)i of the policy states that all proposed developments should take account of “site-specific opportunities to protect and enhance landscape character”. This should help to ensure that the landscape character is safeguarded and strengthened throughout the lifetime of the proposed development. Part (b) of the policy iterates that the “proposed development is required to demonstrate how, throughout the lifetime of the site, the site will deliver multiple benefits, taking account of the local economic, social and environmental context of the site”. This broad-brushed approach to evaluating the site should help to minimise any negative visual impacts which may arise from proposed economic, social or environmental change.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	++	<p>Part (d)i of the policy states that all proposed developments should take account of “site-specific opportunities to conserve, restore and enhance ecological networks and deliver net gains for biodiversity”. In addition, part (d)vii of the policy seeks to “improve the condition, legibility and understanding of geodiversity within a site.” This policy should help to ensure that Worcestershire’s biodiversity and geodiversity assets are effectively conserved and enhanced on a site-by-site basis. Specifically, the inclusion of biodiversity net gains helps to prevent any net losses to biodiversity, and ensures that biodiversity assets will be carefully assessed and managed throughout the lifetime of the proposed site.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	++	<p>The policy highlights that the proposed development is required to “protect and enhance the condition, legibility and understanding of heritage assets and their setting”, in addition to taking account of “site-specific opportunities to protect and enhance landscape character”. These two policy parts should work in conjunction with one another to prevent any adverse impacts on local heritage assets, and, on a wider scale, the local character of the area. Overall, the policy’s requirement to protect and enhance the heritage asset and their setting should provide a framework for delivering a resource-efficient development which respects the distinctiveness of a place.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+	<p>Although there is no direct part of the policy which focuses on the specific material assets included within the SA objective, the policy does require any proposed development to “protect and enhance networks of green infrastructure throughout the lifetime of the development”. This policy infers that green infrastructure, including open spaces and parcels of the Green Belt are safeguarded from inappropriate development, however there was no specific reference to safeguarding versatile agricultural lands or re-using vacant buildings within the site. For this reason, it is likely that the policy will have a minor positive effect on the SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	++	<p>Part (d)v of the policy states that the proposed development should “protect and enhance the surface water and groundwater resources at the local and catchment scale”, as well as part (c) of the policy which states that the proposed development should take account of the “potential impacts of climate change”. As climate change is inherently linked to air pollution, it is likely that the policy will help to address the air quality element of the SA objective. The protection and enhancement of groundwater and surface water resources at the local level will prevent pollutants from entering the water network at a source point, whilst the protection and enhancement of surface water and groundwater at catchment scale will ensure that water pollution does not occur within the wider catchment area. Overall, these preventative efforts should result in the current standard of water and air quality being met and/or exceeded.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	++	<p>Climate change adaptation is an important aspect of all future developments. This policy addresses this with Part (c), where the proposed development is required to take account of “the potential impacts of climate change”.</p> <p>Part (e) of the policy also requires proposed developments to take account of how “green infrastructure benefits will be secured for the long term.” This will ensure that green infrastructure will be in place to mitigate climate change impacts during the lifetime of the development.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>
<p>SA7: Flooding</p>	++	<p>Part (d)iv of the policy states that the proposed development should seek opportunities to “reduce</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.		<p>the causes and impacts of flooding.” , as well as “protect and enhance the surface water and groundwater resources at the local and catchment scale”. These measures should sufficiently mitigate fluvial flood risks, as well as ensuring that inappropriate development does not alter surface water or groundwater resources on-site.</p> <p>The enhancement of green infrastructure networks will provide a natural buffer. This will be especially beneficial during periods of peak surface water runoff.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+	The policy requires the proposed development to seek opportunities to “enhance the rights of way network and the provision of publicly accessible green space”. This should improve the quality of public access routes around and to the site. For this reason, a minor positive effect is expected on this SA objective.
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+	The policy highlights that the proposed development will seek opportunities to deliver “enhanced provision of publicly accessible green space”. This should include indirect benefits to the health and well-being of the local community, as better and more equitable access to natural assets are likely to promote healthier lifestyles. For this reason, a minor positive effect is expected on this SA objective.
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	0	No impacts on this SA objective have been identified.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	0	No impacts on this SA objective have been identified.
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the</p>	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
infrastructure and skills base whilst ensuring all share the benefits, urban and rural.		
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	<p>The policy states that proposed mineral development will “protect and enhance networks of green infrastructure throughout the life of the development”. This will contribute to the creation of pleasant local environments that are publicly accessible.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No impacts on this SA objective have been identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 4: Avon and Carrant Brook Strategic Corridor

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	<p>++/-?</p>	<p>The strategic corridor specifically excludes the Cotswolds AONB, although this exclusion is not 'buffered' (apart from a small area near Eckington). This means that the corridor adjoins the AONB boundary and, in some places, surrounds it on three sides. There is therefore potential for development outside but adjacent to the AONB having a negative effect on the AONB's special qualities. This would be increased through multiple sites all being developed within the AONB's setting. There is, however, no specific distance from an AONB at which setting issues can be discounted, as they will depend on the nature and scale of any development, and its intervisibility with the AONB. Placing an arbitrary buffer around the AONB would therefore be difficult to justify, and policies elsewhere in the MLP should help to ensure full regard is had to the special purposes of the Cotswolds AONB. The landscape and visual impacts of development within the corridor will vary according to proposals' specific locations, and the corridor is too large to enable any specific effects to be identified.</p> <p>The policy states that minerals development will be permitted where this "contributes towards the quality, character and distinctiveness of the corridor", which is expected to safeguard and strengthen landscape character, and avoid any significant adverse effects on the landscape. In addition, Priorities (a), (b) and (d) of the policy seek to "create wetland features such as wet pasture, water meadows, reedbed, fen, marsh, and ditches both during working phases and alongside restoration to characteristic agricultural land uses including arable, cropping, horticulture and orchards", "conserve, enhance and restore characteristic hedgerow patterns, and linear tree belts along hedge and ditch lines and along the banks of watercourses" and "in the Principal Village Farmlands and Village Farmlands with Orchards landscape types, conserve, enhance and restore lines of hedgerow fruit trees to define medium to large scale fields". This should help to ensure that these elements of the landscape character are preserved and restored throughout the lifetime of the proposed development. Overall, it is likely that the policy will have a mixed significant positive and minor negative uncertain effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	<p>+/--?</p>	<p>There are no SACs within the corridor, but part of the corridor is less than 1km from the Bredon Hill SAC. No particular effects on the SAC can be identified at this stage, although the Habitats Regulation Assessment states that the MLP is not likely to have significant effects on any internationally designated site. The corridor contains four SSSIs (Rectory Farm Meadows, Beckford Gravel Pit, Eckington Railway Cutting, and Cropthorne New Inn Section), three Local Geological Sites (Beckford Gravel Pit, Rectors Pit and Cropthorne Playing Field) and a number of Local Wildlife Sites.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>It also lies adjacent to three SSSIs (Urban Meadow and Summer Leasow, Tiddesley Wood, and Windmill Hill). Because it is not known where development might occur within the corridor specific likely effects on receptors cannot be predicted with certainty.</p> <p>The policy prioritises the creation of wetland features and the restoration of characteristic hedgerow patterns and tree cover along watercourses and streamlines. In addition, Priority (c) includes enhancing the rights of way network, including incorporating information or routes which increase the legibility and understanding of geodiversity and the policy promotes delivery and enhancement of green infrastructure networks, which may help to create and enhance wildlife corridors. These priorities should help to ensure that biodiversity and geodiversity assets are conserved and enhanced. As it is not yet known where the proposed sites will lie within the corridor, it is likely that the policy will have a mixed minor positive and significant negative uncertain effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/--?	<p>The corridor contains a relatively small number of Grade II listed buildings but also adjoins a number of Conservation Areas. The corridor also contains five locally important parks and gardens (Wood Norton Hall, Wick House, Lower Hill, Bricklehampton Hall, and Endon Hall). Fourteen Scheduled Monuments are located within the corridor (e.g. a Roman settlement northwest of Ryden Farm and some prehistoric enclosures E of Norton Church), as well as one registered battlefield (Battle of Evesham 1265). This in itself does not mean that negative effects are likely, as the precise location of development in relation to any of these assets is not yet known. Part (c) of the policy seeks to encourage "incorporating information or routes which increase the legibility and understanding of the geodiversity, heritage and character of the area". This is likely to increase engagement with and understanding of the historic environment. For this reason, mixed minor positive and significant negative effects have been identified, but these negative effects are uncertain as they depend on the exact location and size of development.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green</p>	+?/--?	<p>Agricultural land quality varies across the corridor, with the better quality land tending to follow the course of the river Avon. Without knowing more about where development may take place, the corridor is too large to allow for specific judgements on the likely effect on agricultural land quality. The priorities for the corridor seek to restore "characteristic agricultural land uses including arable, cropping, horticulture and orchards", which could help to ensure that the most versatile agricultural land is safeguarded, and for restoration of agricultural land within the strategic corridor to be achieved. However, development within the corridor could lead to loss of best and most versatile</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
infrastructure.		<p>agricultural land.</p> <p>The corridor does not include any Green Belt land.</p> <p>Overall, the policy is likely to have a mixed minor positive uncertain and significant negative uncertain effect on the SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+/--?	<p>There are no Source Protection Zones within the corridor. The corridor does not include any Air Quality Management Areas. However, the corridor contains some rivers and a lake, as well as residential areas (it is adjacent to the larger settlements of Evesham and Pershore), places of worship, and outdoor leisure and recreation facilities, which can be sensitive to changes in air and water quality.</p> <p>Part (a) of the policy requires proposed developments which seek opportunities to “create wetland features such as wet pasture, water meadows, reedbed, fen, marsh, and ditches both during working phases and alongside restoration”. These features help to manage and improve water quality, as noted in the reasoned justification.</p> <p>Overall, the policy is likely to have a mixed minor positive and significant negative uncertain effect on the SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+?/?	<p>The exact climate change effects of mineral developments can only be predicted with more certainty once the location and detail of workings is known. The climate change effects will depend upon working practices and transport modes. Not enough is known about how and where sites will be developed within the corridor to judge whether or not they could, for example, exploit opportunities for renewable energy.</p> <p>The policy outlines that the strategic corridor will “conserve, enhance and restore characteristic hedgerow patterns, and linear tree belts along hedge and ditch lines and along the banks of watercourses”. The inclusion of this policy priority may help to ensure that proposed mineral developments should result in no loss of significant tree cover. In turn, this could help to mitigate impacts of climate change. The priorities also include wetland creation, which could have positive effects on this objective through providing carbon storage. In addition, the corridor contains railway lines and water links that could have potential for transporting minerals in a more sustainable way than road transport, although this is uncertain, as it will depend on loading/unloading facilities and</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>route availability between source and destination.</p> <p>The policy is likely to have a mixed minor positive uncertain and uncertain effect on the SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+/?	<p>The corridor includes areas that lie within flood zone 3; however this represents only a small proportion of the corridor as a whole. The flood zones are to be expected, as much of the sand and gravel resource is associated with river terraces. Overall, it is considered unlikely that the policy itself will have significant effects on this SA objective, as many aspects of minerals development will not be "inappropriate" in these zones and it is unrealistic to seek to exclude them. The precise effects cannot be predicted without further detail on where development will occur within this corridor.</p> <p>The Avon and Carrant Brook Strategic Corridor policy highlights that the creation of "wetland features such as wet pasture, water meadows, reedbed, fen, marsh, and ditches both during working phases and alongside restoration" will be prioritised for each proposed development. The reasoned justification states that wetland creation will aid natural flood management, flood storage and floodplain connectivity, therefore improving flood management in Worcestershire.</p> <p>Overall, the policy is likely to have a mixed minor positive and uncertain effect on the SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+?	<p>Public rights of way extend across the county in all areas, inside and outside the corridor. Development within the corridor could both threaten existing routes and improve them as part of green infrastructure enhancements during development and restoration. The MLP has included a priority within this corridor to "link, extend and enhance the network of public rights of way and other public access routes". The specific recognition of public access is welcomed, and should ensure that development in this corridor achieves "extension and enhancements to public rights of way, as well as protecting existing rights of way from harm".</p> <p>Overall, the policy is likely to have a minor positive uncertain effect on the SA objective. The uncertainty relates to the fact that it is not known whether public rights of way will be affected in the short term and to recognise that the reasoned justification states "in some cases it may not be possible or desirable to deliver all priorities on a single site".</p>
<p>SA9: Health and amenity</p>	+?/--?	<p>This strategic corridor contains and lies adjacent to a number of residential areas, and contains places of worship and outdoor leisure and recreation facilities. Minerals extraction within 100m of these</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>Improve the health and well-being of the population and reduce inequalities in health.</p>		<p>sensitive receptors could therefore cause noise, dust, or other emissions. Additionally, an overhead power line also passes through the corridor. In the short term, effects on health and amenity may generally be expected to be negative. In the longer term, the MLP's approach of seeking green infrastructure enhancement should have correspondingly positive effects on health, which can be closely linked to GI (for example through the improved quantity of and/or accessibility to green space). Priority (c), which requires extension and enhancement of public rights of way, is also expected to improve opportunities for recreation in the county. As the precise location of development and associated green infrastructure is not yet known, it is not possible to estimate what the exact health impacts would be on the local community. For this reason, a mixed minor positive uncertain and significant negative uncertain effect has been identified.</p>
<p>SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	-	<p>This strategic corridor contains a biological treatment works, a waste transfer station and a metal recycling/end of life vehicles site. The corridor also lies directly adjacent to the Hill and Moor landfill, household recycling, waste transfer and composting centre. Minerals development could adversely affect operation of these sites and/or lead to cumulative negative effects on nearby receptors.</p> <p>In addition, this policy promotes the use of primary mineral extraction rather than encouraging the use of secondary minerals. As such, minor negative effects have been identified.</p>
<p>SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.</p>	+?	<p>Much of the corridor is close to the river Avon, which could provide opportunities for sustainable transport movements. Without further information, it is not possible to predict the likely transport effects arising from this corridor.</p> <p>Overall, the policy is likely to have a minor positive uncertain effect on the SA objective.</p>
<p>SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	++/--?	<p>Although it contains less of other minerals, this corridor contains 33% of Worcestershire's key and significant terrace and glacial sand and gravel resources. This is a very substantial amount of the county's potential resources, and allocating this corridor should help to facilitate the extraction and processing of sufficient resources for the development necessary for growth and infrastructure. The corridor relates well to potential end uses in Evesham, Pershore and Tewkesbury, and, with much of the corridor accessible to the M5 and M50, as well as major A roads, it is well placed to serve local and wider markets.</p> <p>The size of the corridor offers scope for multiple mineral developments and the beneficial economic</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>effects they can bring, including to employment in the local area. However, the strategic corridor is located adjacent to two areas allocated for employment development, which could be compromised by development within the corridor.</p> <p>Overall, the policy is likely to have a mixed significant positive and significant negative uncertain effect on the SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+/--?	<p>Although it contains less of other minerals, this corridor contains 33% of Worcestershire's key and significant terrace and glacial sand and gravel resources. This is a very substantial amount of the county's potential resources, and allocating this corridor should help to facilitate the extraction and processing of sufficient resources for the county's housing growth. The corridor relates well to potential end uses in Evesham, Pershore and Tewkesbury, and, with much of the corridor accessible to the M5 and M50, as well as major A-roads, it is well placed to serve local and wider markets. However, the strategic corridor is located adjacent to a number of areas allocated for the provision of housing, which could be compromised by development within the corridor.</p> <p>Overall, the policy is likely to have a mixed minor positive significant negative uncertain effect on the SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	<p>No effects on this SA objective have been identified.</p>
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	<p>Minerals development may offer potential opportunities to foster new technologies in extraction, processing and transport, but this policy will not, in itself, have any effect on this SA objective. For this reason, no effects on this SA objective have been identified.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.</p>	+	<p>Part (c) of the policy seeks to encourage “incorporating information or routes which increase the legibility and understanding of the geodiversity heritage and character of the area”. This could provide opportunities for learning within the local community.</p> <p>Overall, the policy is likely to have a minor positive effect on this SA objective.</p>
<p>SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.</p>	0	<p>No effects on this SA objective have been identified.</p>

Policy MLP 5: Lower Severn Strategic Corridor

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	<p>++/-?</p>	<p>The strategic corridor is very roughly equidistant from both the Malvern Hills AONB to the west and the Cotswolds AONB to the east. The corridor is considered to be a sufficient distance to mean that development is unlikely to fundamentally compromise the purposes of the AONB designations. A number of sensitive receptors, including residential areas and public rights of way lie within and adjacent to the corridor. The landscape and visual impacts of development within the corridor will depend on their specific locations, and the corridor is too large to enable any specific effects to be identified.</p> <p>The policy states that minerals development will be permitted where this “contributes towards the quality, character and distinctiveness of the corridor”, which is expected to safeguard and strengthen landscape character, and avoid any significant adverse effects on the landscape. In addition, Priority (a) of the policy seeks to “create wetland features such as fen and marsh, wet grassland, reedbed and lowland meadows ... including the restoration to characteristic agricultural land uses such as: cropping and horticulture in the Settles Farmlands on River Terraces landscape type, and pastoral land use in the Riverside Meadows and Wet Pasture Meadows landscape type”. Part (b) of the policy seeks to “conserve, enhance and restore characteristic hedgerow patterns and tree cover along watercourses and streamlines”. This should help to ensure that these elements of the landscape character are preserved and restored throughout the lifetime of the proposed development. Overall, it is likely that the policy will have a mixed significant positive and minor negative uncertain effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	<p>+/--?</p>	<p>The corridor contains two SSSIs (Ashmoor Common and Upton Ham), one Local Geological Site (Ashmoor Common) and a number of Local Wildlife Sites. It also lies adjacent to three SSSIs (River Teme, Severn Ham, and Old River Severn). There are no SACs within the corridor or in close proximity. The MLP's approach to guiding development that contributes towards green infrastructure in strategic corridors – especially (but not exclusively) occurring post-restoration – should mean that the policy will foster this SA objective. The policy prioritises the creation of wetland features and hedgerow patterns and tree cover along watercourses and streamlines, which are likely to support biodiversity. In addition, part (c) of the policy prioritises the “creation of accessible semi-natural greenspaces which incorporate information or routes which increase the legibility and understanding of ... geodiversity” and the policy promotes delivery and enhancement of green infrastructure networks, which may help to create and enhance wildlife corridors. These priorities should help to ensure that biodiversity and geodiversity assets are conserved and enhanced. As it is not yet known</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		where minerals sites will lie within the corridor, it is likely that the policy will have a mixed minor positive and significant negative uncertain effect on this SA objective.
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/--?	<p>This strategic corridor contains five Conservation Areas (Ripple, Uckinghall, Upton Severn, Kempsey, and Powick) and a large number of Grade II listed buildings. Additionally, it contains three Grade I listed buildings (Church of St Mary, another Church of St Mary, and Church of St Peter and St Lawrence). Two Scheduled Monuments are located within close proximity to the corridor (Ringwork known as Hanley Castle and Towbury Hill Camp), and a Registered Battlefield (Battle of Worcester 1651 with Powick Bridge 1642) falls partly within the northern part of the corridor. The area of search contains part of a nationally registered historic park and garden (Croome Court) and lies directly adjacent to another registered historic park and garden (Pirton Park). The corridor also contains a locally important park and garden (The Nash), and is adjacent to two others: Rhydd Court and The Park. This in itself does not mean that negative effects are likely, as the precise location of development in relation to any of these assets is not yet known.</p> <p>Although the historic environment forms a part of green infrastructure, it has not been instrumental in guiding the location of this strategic corridor, nor in the approach to its restoration. Landscape-scale restoration can help to improve the setting of the historic environment, and there are close linkages between landscape character and historic landscape character. In addition, part (c) of the policy seeks to encourage “incorporating information or routes which increase the legibility and understanding of the geodiversity, heritage and character of the area”. This is likely to increase engagement with and understanding of the historic environment. Overall, mixed minor positive and significant negative uncertain effects are expected.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+?/--?	<p>Agricultural land quality varies across the corridor. This strategic corridor contains a mixture of mainly Grades 1, 2, 3 and 4 agricultural land. Without knowing more about where development may take place, the corridor is too large to allow for specific judgements on the likely effect on agricultural land quality, although development within the corridor could lead to loss of best and most versatile agricultural land. The corridor does not include any Green Belt land.</p> <p>Whilst the policy integrates priorities which seek to restore the character of agricultural lands, there is no specific requirement to direct development to areas of lower quality agricultural land.</p> <p>Overall, the policy is likely to have a mixture of minor positive uncertain and significant negative</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		uncertain effects on the SA objective.
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+/--?	<p>There are no Source Protection Zones within the corridor. Additionally, the corridor does not include any Air Quality Management Areas, but development within the corridor could potentially affect AQMAs at St John's, Worcester, Lowesmoor/Rainbow Hill, Worcester and Bridge Street/Dolday, Worcester. The corridor's proximity to the river Severn should also be considered. This corridor is too large to identify specific effects from minerals development on air quality in general.</p> <p>Part (a) of the policy requires any proposed minerals development to prioritise "creating wetland features such as fen and marsh, wet grassland, reedbed and lowland meadows both during working phases and alongside restoration to characteristic agricultural land uses". This could help to manage and improve water quality, as noted in the reasoned justification. The strategic corridor is too vast to identify specific impacts from minerals development on the water quality within the area without knowing the specific sites of the proposed development. Therefore, overall, the policy is likely to have a mixture of minor positive and significant negative uncertain impacts on the SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+?/?	<p>The exact climate change effects of minerals development can only be predicted once the location and detail of workings is known. The climate change effects will depend upon working practices and transport modes. Not enough is known about the sites to judge whether or not they could, for example, exploit opportunities for renewable energy.</p> <p>The corridor is covered by a number of river networks, which suggests that suitable water links could be available for transportation, although this is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination. Furthermore, the corridor is located within close proximity to potential markets, such as Worcester. The priorities also include wetland creation, which could have positive effects on this objective through providing carbon storage.</p> <p>Overall, the policy is likely to have a mixture of minor positive uncertain and uncertain effects on the SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or</p>	+/?	<p>The corridor includes significant areas of flood zones 2 and 3, primarily related to the river Severn, with these flood zones probably covering a majority of the corridor. The flood zones are to be expected, as much of the sand and gravel resource is associated with river terraces. Overall, it is considered unlikely that the policy itself will have significant effects on this SA objective, as many</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>contribute to surface water flooding in all other areas.</p>		<p>aspects of minerals development will not be "inappropriate" in these zones and it is unrealistic to seek to exclude them. The precise effects cannot be predicted without further detail on where development will occur within this corridor.</p> <p>Part (a) of the policy requires any proposed minerals development to prioritise "creating wetland features such as fen and marsh, wet grassland, reedbed and lowland meadows both during working phases and alongside restoration to characteristic agricultural land uses". The reasoned justification states that wetland creation will aid natural flood management, flood storage and floodplain connectivity, therefore improving flood management in Worcestershire.</p> <p>Overall, the policy is likely to have a mixed minor positive and uncertain impact on the SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	<p>+/--?</p>	<p>Public rights of way extend across the county in all areas, inside and outside the corridor. Development within the corridor could both threaten existing routes, therefore compromising the ability of people to access health, educational or other key local services, and improve them as part of green infrastructure enhancements during development and restoration. For this reason, the policy is likely to have a mixture of both minor positive and significant negative impacts on the SA objective.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	<p>++/--?</p>	<p>This strategic corridor lies adjacent to a number of residential areas (e.g. the settlements of Worcester, Powick, Kempsey, Severn Stoke, Upton upon Severn, Ripple, The Grove, and Ryall). Minerals extraction within 100m of these sensitive receptors could compromise health and wellbeing through causing noise, dust, or other emissions. In the short term, effects on health and amenity may generally be expected to be negative. In the longer term, the MLP's approach of seeking green infrastructure enhancement should have correspondingly positive effects on health, which can be closely linked to GI (for example through the improved quantity of and/or accessibility to green space). Priority (c) includes the creation of accessible semi-natural green space, which would be a significant recreation resource in this area. Health impacts will be varied and localised to each site. Overall the policy is likely to have a mixed significant positive and significant negative effect uncertain on the SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	-	<p>This strategic corridor contains a landfill site and a household recycling centre.</p> <p>In addition, this policy promotes the use of primary mineral extraction rather than encouraging the use of secondary minerals. Overall, a minor negative effect is likely.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+?	<p>With the exception of that part which extends east of the M5 motorway, all areas of the corridor are reasonably close to the river Severn. This could provide opportunities for sustainable transport movements, although evidence suggests that a significant shift to water-borne transport is unlikely within the plan period. The corridor is relatively narrow, and runs north to south, meaning that accessibility to the motorway is generally good. Overall, the policy is expected to have a minor positive uncertain effect on the SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	++/--?	<p>This corridor contains 15% of the county's key and significant terrace and glacial sand and gravel resources and is underlain by 5% of the county's Mercia Mudstone clay resource. This is a significant amount of the county's potential resources, and allocating this corridor should help to facilitate the extraction and processing of sufficient resources for the development necessary for growth and infrastructure.</p> <p>The corridor relates well to potential end uses in Worcester, Upton and Tewkesbury, as well as markets further afield, such as Malvern. All of the corridor is accessible to the M5 and/or M50, as well as major A-roads, and so is well placed to serve local and wider markets. The size of the corridor offers scope for multiple mineral developments and the beneficial economic effects they can bring, including to employment in the local area. However, the corridor contains part of the proposed Worcester southern link road, therefore there may be a conflict between minerals development and this new infrastructure.</p> <p>Overall, the policy is likely to have a mixed significant positive and significant negative uncertain effect on the SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in</p>	+/--?	<p>This corridor contains 15% of the county's key and significant terrace and glacial sand and gravel resources and is underlain by 5% of the county's Mercia Mudstone clay resource. This is a substantial amount of the county's potential resources, and allocating this corridor should help to facilitate the extraction and processing of sufficient resources needed to deliver housing and associated</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
clean, safe and pleasant local environments.		<p>development that can help to ensure clean, safe and pleasant local environments.</p> <p>The corridor relates well to potential housing development requirements in Worcester, Upton and Tewkesbury, as well as markets further afield, such as Malvern. All of the corridor is accessible to the M5 and/or M50, as well as major A-roads, and so is well placed to serve local and wider markets. However, this strategic corridor is located adjacent to a number of areas allocated for the provision of housing.</p> <p>Overall, the policy is likely to have a mixed minor positive and significant negative uncertain effect on the SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	<p>Worcestershire's three key sectors, identified in the Worcestershire Local Enterprise Partnership's Strategic Economic Plan, are advanced manufacturing; agri-tech; and cyber security, defence and IT. Malvern is a recognised centre for high-technology, and so providing minerals in this corridor could support any technology-related growth in Malvern. Minerals development itself may offer potential opportunities to foster new technologies in extraction, processing and transport, but this policy will not, in itself, have any effect on this SA objective.</p>
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	+	<p>Part (c) of the policy seeks to encourage "incorporating information or routes which increase the legibility and understanding of the geodiversity heritage and character of the area". This could provide opportunities for learning within the local community.</p> <p>Overall, the policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial</p>	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
behaviour.		

Policy MLP 6: North East Worcestershire Strategic Corridor

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	<p>++/-?</p>	<p>This strategic corridor is not located within an AONB. Depending on where development is located within the corridor, minerals extraction could have a visual impact on the residential areas located within or adjacent to the corridor (e.g. the settlements of Holy Cross, Fairfield, Upper Marlbrook, Barnt Green, Blackwell, Lickey End, Burcot, Finstall and Bromsgrove), as well as the public rights of way, National Cycle Route, and outdoor leisure/recreation sites within or adjacent to the area. For example, the corridor lies directly adjacent to two Country Parks (Clent Hills and Lickey Hills) and is within close proximity of another Country park (Waseley Hills). The landscape and visual impacts of development within the corridor will vary according to proposals' specific locations, and the corridor is too large to enable any specific effects to be identified.</p> <p>The policy states that permission will be granted for development that “contributes towards the quality, character and distinctiveness of the corridor”, which is expected to safeguard and strengthen landscape character, and avoid any significant adverse effects on the landscape. In addition, Priorities (a) and (b) of the policy seek to “conserve and restore permanent pasture, incorporating lowland heathland, acid grassland and scrub habitats”, and “conserve, enhance and restore characteristic hedgerow patterns and tree cover along watercourses and streamlines”. This should help to ensure that these elements of the landscape character are preserved and restored throughout the lifetime of the proposed development. Overall, it is likely that the policy will have a mixed significant positive and minor negative uncertain effect on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	<p>+/--?</p>	<p>The corridor contains two SSSIs (Madeley Heath Pit and Burcot Lane Cutting), two Local Geological Sites (Madeley Heath and Shepley Sandpit and Knoll) and a number of Local Wildlife Sites. The corridor also lies adjacent to Feckenham Forest SSSI. Because it is not known where development might occur within the corridor, specific likely effects on receptors cannot be predicted with confidence. Part (a) of the policy prioritises the “conservation and restoration of permanent pasture, incorporating lowland heathland, acid grassland and scrub habitats”, and part (b) of the policy refers to “conserving, enhancing and restoring characteristic hedgerow patterns and tree cover along watercourses and streamlines”, which are likely to support biodiversity. In addition, the policy prioritises the “creation of accessible semi-natural greenspaces which incorporate information or routes which increase the</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		legibility and understanding of ... geodiversity" and the policy promotes delivery and enhancement of green infrastructure networks, which may help to create and enhance wildlife corridors. These priorities should help to conserve and enhance biodiversity and geodiversity assets. As it is not yet known where the proposed sites will lie within the corridor, it is likely that the policy will have a mixed minor positive and significant negative uncertain effect on the SA objective.
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/--?	<p>This strategic corridor contains four Conservation Areas (Clent, Holy Cross, Barnt Green, and Worcester and Birmingham Canal) and a large number of mainly Grade II listed buildings. Additionally, the corridor lies adjacent to a Scheduled Monument (Moated site at Fairfield Court). In addition, the corridor lies directly adjacent to a nationally registered historic park and garden (Hagley Hall). This in itself does not mean that negative effects are likely, as the precise location of development in relation to any of these assets is not yet known. Although the historic environment forms a part of green infrastructure, it has not been instrumental in guiding the location of this strategic corridor, nor in the approach to its restoration. Landscape-scale restoration can help to improve the setting of the historic environment, and there are close linkages between landscape character and historic landscape character. In addition, part (d) of the policy seeks to encourage "incorporating information or routes which increase the legibility and understanding of the geodiversity, heritage and character of the area". This is likely to increase engagement with and understanding of the historic environment. Overall, mixed minor positive and significant negative uncertain effects are identified.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	--?	<p>The corridor is almost wholly within the Green Belt. The NPPF states that "mineral extraction" and "engineering operations" are not inappropriate in the Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in Green Belt. Other forms of development associated with minerals, however, including some buildings, may be inappropriate development. As such, this corridor has the potential to conflict with this SA objective's aim of safeguarding Green Belt land.</p> <p>Agricultural land quality varies across the corridor, including Grades 1, 2, 3 and 4 agricultural land. Without knowing more about where development may take place, the corridor is too large to allow for specific judgements on the likely effect on agricultural land quality. There</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>is no requirement to direct development to areas of lower quality agricultural land within the North East Worcestershire Strategic Corridor policy, therefore development could lead to loss of best and most versatile agricultural land.</p> <p>Overall, the policy is likely to have a significant negative effect on the SA objective, although this is uncertain as it depends on the exact location of development.</p>
<p>SA5: Natural Resources Protect and enhance water and air quality.</p>	--	<p>Almost the entire corridor falls within Source Protection Zone 3. It also includes parts of Source Protection Zone 2 and Source Protection Zone 1. The corridor includes the Lickey End Air Quality Management Area. It is also very close to the Hagley AQMA and, immediately beyond this, the Dudley AQMA. The corridor largely surrounds Bromsgrove town, where the Worcester Road and Redditch Road AQMAs are found. The corridor is too large to identify specific effects from minerals development on the AQMAs or on air quality in general.</p> <p>Overall, the policy is likely to have a significant negative effect on the SA objective.</p>
<p>SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+?/?	<p>The exact climate change effects of minerals development can only be predicted with certainty once the location and detail of workings is known. The climate change effects will depend upon working practices and transport modes. Not enough is known about the sites to judge whether or not they could, for example, exploit opportunities for renewable energy. The corridor is, however, covered by a number of river networks, which suggests that suitable water links could be available and the corridor is serviced by one railway line. However, the use of sustainable modes of transport is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination.</p> <p>Overall, the policy is likely to have a mixture of minor positive uncertain and uncertain effects on the SA objective.</p>
<p>SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water</p>	+/?	<p>This strategic corridor contains a number of areas that fall within flood zone 3. In the context of the wider corridor, these areas are relatively negligible, representing only a small proportion of the corridor as a whole. Overall, it is considered unlikely that the policy itself will have significant effects on this SA objective, as many aspects of minerals development will not be "inappropriate" in these zones and it is unrealistic to seek to exclude them. The precise effects cannot be predicted without further detail on where development will occur</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
flooding in all other areas.		<p>within this corridor. Part (c) of the policy requires any proposed minerals development to prioritise “slow the flow of water in upper reaches of the catchment”. This may reduce downstream flood risk and increase drought resilience, as explained in the reasoned justification.</p> <p>Overall, the policy is likely to have a mixed minor positive and unknown impact on the SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+/--?	<p>Public rights of way extend across the county in all areas, inside and outside the corridor. Development within the corridor could both threaten existing routes, therefore compromising the ability of people to access health, educational or other key local services, and improve them as part of green infrastructure enhancements during development and restoration. For this reason, the policy is likely to have a mixture of both minor positive and significant negative uncertain impacts on the SA objective.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	++/--?	<p>This strategic corridor contains and lies adjacent to a number of residential areas (e.g. the settlements of Holy Cross, Fairfield, Upper Marlbrook, Barnt Green, Blackwell, Lickey End, Burcot, Finstall and Bromsgrove), and contains a number of schools and outdoor leisure and recreation facilities. Minerals extraction within 100m of these sensitive receptors could cause noise, dust, or other emissions. In the short term, effects on health and amenity may generally be expected to be negative. In the longer term, the MLP's approach of seeking green infrastructure enhancement should have correspondingly positive effects on health, which can be closely linked to GI (for example through the improved quantity of and/or accessibility to green space). Priority (d) includes the creation of accessible semi-natural green space, which would be a significant recreation resource in this area. Health impacts will be varied and localised to each site. Overall the policy is likely to have a mixed significant positive and significant negative uncertain effect on the SA objective.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	-	<p>This strategic corridor contains two landfill sites, a household recycling centre, a waste transfer station, a landfill and waste transfer station, biological treatment works and a household recycling centre. These are all located within the northern half of the centre, near Stoney Lane.</p> <p>In addition, this policy promotes the use of primary mineral extraction rather than</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		encouraging the use of secondary minerals. Overall, a minor negative effect is likely.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	<p>+?</p>	<p>The Worcester and Birmingham canal just passes through the extreme eastern edge of the corridor, but this has not been identified as a likely conduit for minerals transport, and the Tardebigge Flight of locks could make movement southwards difficult. The corridor is, however, covered by a number of river networks, which suggests that suitable water links could be available and contains a railway line. However, the use of more sustainable modes of transport is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination. The corridor is very well served by the motorway network, with access to the M5 and M42. The corridor is not so large that there are areas with particularly poor access to the strategic transport network, helping to minimise transport emissions. Therefore, the policy will have a minor positive uncertain effect on the SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	<p>++</p>	<p>Although the corridor only contains 4% of the county's key and significant terrace and glacial sand and gravel resources and 1% of known former building stone quarries, it contains 24% of the county's key and significant solid sand resource (including 20% of the Wildmoor Formation which contains silica sand resources). This is a substantial amount of the county's potential resources, and allocating this corridor should help to facilitate the extraction and processing of sufficient resources for the development necessary for growth and infrastructure. The corridor relates well to potential end uses in Bromsgrove and surrounding settlements in particular, but also to settlements further afield including Redditch, Kidderminster, and the West Midlands conurbation. Being accessible to the motorway network and major A-roads, it is well placed to serve local and wider markets. The size of the corridor offers scope for multiple mineral developments and the beneficial economic effects they can bring, including to employment in the local areas.</p> <p>Overall, the policy is likely to have a significant positive impact on the SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local</p>	<p>+/--?</p>	<p>Although the corridor only contains 4% of the county's key and significant terrace and glacial sand and gravel resources and 1% of known former building stone quarries, it contains 24% of the county's key and significant solid sand resource (including 20% of the Wildmoor Formation which contains silica sand resources). This is a substantial amount of the county's</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
environments.		<p>potential resources, and allocating this corridor should help to facilitate the extraction and processing of sufficient resources to deliver housing and the development needed to secure clean, safe and pleasant local environments. The corridor relates well to potential housing development in Bromsgrove and surrounding settlements in particular, but also to settlements further afield, including Redditch, Kidderminster, and the West Midlands conurbation. The West Midlands conurbation may generate strong demand for minerals for housebuilding, given the significant housing growth being planned for in and around Birmingham. Being accessible to the motorway network and major A-roads, it is well placed to serve local and wider markets. However, the strategic corridor is located adjacent to a number of areas allocated for the provision of housing.</p> <p>Overall, the policy is likely to have a mixed minor positive and significant negative uncertain effect on the SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	Minerals development itself may offer potential opportunities to foster new technologies in extraction, processing and transport, but this policy will not, in itself, have any effect on this SA objective.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the</p>	+	Part (d) of the policy seeks to encourage “incorporating information or routes which increase the legibility and understanding of the geodiversity heritage and character of the area”. This could provide opportunities for learning within the local community.

Sustainability Appraisal Objectives	SA Score	Potential effects
workforce.		Overall, the policy is likely to have a minor positive effect on the SA objective.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No effects on this SA objective have been identified.

Policy MLP 7: North West Worcestershire Strategic Corridor

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	<p>++/-?</p>	<p>This strategic corridor is not located within an AONB. Depending on where development is located, it could have a visual impact on residential areas located within or adjacent to the corridor (e.g. the settlements of Kidderminster, Fairfield, Cookley, Blakedown, Stourport-on-Severn, Astley Cross and Bewdley), as well as the public rights of way, National Cycle Route and outdoor leisure/recreation sites within and in close proximity to the area. However, the landscape and visual impacts of development within the corridor will depend on their specific locations, and the corridor is too large to enable any specific effects to be identified.</p> <p>The policy states that minerals development will be permitted where it “contributes towards the quality, character and distinctiveness of the corridor”, which is expected to safeguard and strengthen landscape character, and avoid any significant adverse effects on the landscape. In addition, Priorities (a), (d) and (e) of the policy seek to “conserve, enhance and restore characteristic hedgerow patterns and tree cover along watercourses and streamlines”, “in the Riverside Meadows, conserve and restore permanent pasture, incorporating wetland habitats such as fen and marsh, wet grassland, reedbed and lowland meadows alongside pastoral land use” and “in the Sandstone Estatelands, conserve, enhance and create lowland heathland, acid grassland and scrub.” This should help to ensure that these elements of the landscape character are preserved and restored throughout the lifetime of the proposed development. Overall, it is likely that the policy will have a mixed significant positive and minor negative uncertain effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	<p>+/--?</p>	<p>The corridor contains seven SSSIs (Hurcott Pasture, River Stour Floodplain, Stourvale Marsh, Hurcott and Podmore Pools, Wilden Marsh and Meadows, Devil’s Spittleful SSSI, and Puxton Marshes SSSI), five Local Nature Reserves (Burlish Top, Hurcott Wood, Habberley Valley, Kingsford Forest Park and Redstone), five Local Geological Sites (Bewdley Road Cutting West, Bewdley Road Cutting East, Blackstone Rock, Leapgate Old Railway Line and Redstone Rock) and a number of Local Wildlife Sites. The corridor also lies adjacent to three SSSIs (Kinver Edge, Arley Wood and Hartlebury Common and Hillditch Coppice). Because it is not known where development might occur within the corridor, specific likely effects on receptors cannot be predicted with certainty.</p> <p>The policy prioritises the conservation and restoration of permanent pasture and wetland habitats, and the conservation, restoration and enhancement of hedgerow patterns and tree cover along watercourses and streamlines, which are likely to support biodiversity. In addition, the policy prioritises the conservation, enhancement and creation of lowland heathland, acid grassland and scrub and creation of accessible semi-natural greenspaces which incorporate information or routes</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>which increase the legibility and understanding of geodiversity. Additionally, the policy promotes delivery and enhancement of green infrastructure networks, which may help to create and enhance wildlife corridors. These priorities should help to ensure that biodiversity and geodiversity assets are conserved and enhanced. As it is not yet known where the proposed sites will lie within the corridor, it is likely that the policy will have a mixed minor positive and significant negative uncertain effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/--?	<p>This strategic corridor contains seven Conservation Areas (Chaddesley Corbett, Churchill, Wolverley, Bewdley, Ribbesford, Areley Kings, and Staffs and Worcs Canal) and a large number of mainly Grade II listed buildings. Additionally, it lies approximately 50m to the east of the Grade I listed Church of St Leonard, in Bewdley. Two Scheduled Monuments (small multivallate hillfort on Drakelow Hill and Churchill Forge) are located within the northern quarter of this corridor and it contains three locally important parks and gardens (Blakeshall Hall, Sionhill House and Ribbesford House). This in itself does not mean that negative effects are likely, as the precise location of development in relation to any of these assets is not yet known. Although the historic environment forms a part of green infrastructure, it has not been instrumental in guiding the location of this strategic corridor, nor in the approach to its restoration. Landscape-scale restoration can help to improve the setting of the historic environment, and there are close linkages between landscape character and historic landscape character. In addition, part (c) of the policy seeks to encourage "incorporating information or routes which increase the legibility and understanding of the geodiversity, heritage and character of the area". This is likely to increase engagement with and understanding of the historic environment. Overall, mixed minor positive and significant negative uncertain effects on the historic environment are likely to result from this corridor policy.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	--?	<p>A very large proportion of this strategic corridor is located within the Green Belt. The NPPF states that "mineral extraction" and "engineering operations" are not inappropriate in the Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in Green Belt. Other forms of development associated with minerals, however, including some buildings, may be inappropriate development. As such, this corridor has the potential to conflict with this SA objective's aim of safeguarding Green Belt land.</p> <p>Agricultural land quality varies across the corridor and includes Grades 1, 2, 3 and 4 agricultural land. Without knowing more about where development may take place, the corridor is too large to allow for</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>specific judgements on the likely effect on agricultural land quality. There is no requirement to direct development to areas of lower quality agricultural land within the North West Worcestershire Strategic Corridor policy, therefore development could lead to loss of best and most versatile agricultural land.</p> <p>Overall, the policy is likely to have a significant negative uncertain impact on the SA objective.</p>
<p>SA5: Natural Resources Protect and enhance water and air quality.</p>	+/--	<p>Large areas of the corridor fall within Source Protection Zone 3. It also includes areas of Source Protection Zone 2 and areas of Source Protection Zone 1. There are no Air Quality Management Areas within the corridor, but the corridor does surround Kidderminster from all sides, and there is the potential for negative effects on the Kidderminster (Ring Road) AQMA. The corridor's northern boundary is also directly adjacent to the Dudley AQMA, and the Hagley AQMA is also in close proximity in the same area. The corridor is too large to identify specific effects from minerals development on the AQMAs or on air quality in general.</p> <p>Parts (d) and (e) of the policy requires any proposed minerals development to prioritise “conserve and restore permanent pasture, incorporating wetland habitats such as fen and marsh, wet grassland, acid grassland, reedbed and lowland in the Riverside Meadows and Sandstone Estatelands”. Part (b) includes a priority to “slow the flow of water in upper reaches”. These features may help to manage and improve water quality. The strategic corridor is too vast to identify specific impacts from minerals development on the water quality within the area without knowing the specific sites of the proposed development.</p> <p>Overall, the policy is likely to have a mixed minor positive and significant negative uncertain impact on the SA objective.</p>
<p>SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and</p>	+?/?	<p>The exact climate change effects of minerals development can only be predicted with more certainty once the location and detail of workings is known. The climate change effects will depend upon working practices and transport modes. Not enough is known about the sites to judge whether or not they could, for example, exploit opportunities for renewable energy. The corridor is, however, covered by a number of river networks, which suggests that suitable water links could be available.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
low-carbon sources.		<p>Furthermore, the corridor is serviced by two railway lines. However, the use of more sustainable modes of transport is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination.</p> <p>The priorities also include wetland creation, which could have positive effects on this objective through providing carbon storage.</p> <p>Overall, the policy is likely to have a mixture of minor positive uncertain and uncertain impacts on the SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+/?	<p>The corridor includes significant areas of flood zones 2 and 3, primarily related to the river Severn and river Stour, although the total extent of the flood zones is only a relatively small proportion of the overall corridor area. Overall, it is considered unlikely that the policy itself will have significant effects on this SA objective, as many aspects of minerals development will not be "inappropriate" in these zones and it is unrealistic to seek to exclude them.</p> <p>Part (b) of the policy requires any proposed minerals development to prioritise "slow the flow of water in upper reaches and increase flood storage and floodplain connectivity in lower parts of the catchment", which will help to minimise risk of flooding. In addition, part (d) of the policy states that "wetland habitats such as fen and marsh, wet grassland, reedbed and lowland meadows" will be conserved and enhanced in the Riverside Meadows. The reasoned justification states that wetland creation will aid natural flood management, flood storage and floodplain connectivity, therefore improving flood management in Worcestershire.</p> <p>Overall, the policy is likely to have a mixed minor positive and uncertain impact on the SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+/--?	<p>Public rights of way extend across the county in all areas, inside and outside the corridor. Development within the corridor could both threaten existing routes, which could compromise the ability of people to access health, educational or other key local services, and improve them as part of green infrastructure enhancements during development and restoration. For this reason, the policy is likely to have a mixture of both minor positive and significant negative uncertain impacts on the SA objective.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	++/--?	<p>This strategic corridor contains and lies adjacent to a number of residential areas (e.g. the settlements of Kidderminster, Fairfield, Cockley, Blakedown, Stourport-on-Severn, Astley Cross and Bewdley), and contains a number of schools, places of worship, and outdoor leisure and recreation facilities. Minerals extraction within 100m of these sensitive receptors could therefore cause noise,</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>dust, or other emissions. In the short term, effects on health and amenity may generally be expected to be negative. In the longer term, the MLP's approach of seeking green infrastructure enhancement should have correspondingly positive effects on health, which can be closely linked to GI (for example through the improved quantity of and/or accessibility to green space). Priority (c) includes the creation of accessible semi-natural green space, which would be a significant recreation resource in this area. Health impacts will be varied and very localised to each site. Therefore, overall the policy is likely to have a mixed significant positive and significant negative uncertain effect on the SA objective.</p>
<p>SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	-	<p>This strategic corridor contains a landfill site, a materials reclamation facility, a household recycling centre and a landfill and waste transfer station to its south. It is also located within close proximity to a number of other waste sites, concentrated within the settlements of Kidderminster and Stourport-on-Severn.</p> <p>In addition, this policy promotes the use of primary mineral extraction rather than encouraging the use of secondary minerals. Overall, a minor negative effect is likely.</p>
<p>SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.</p>	+?	<p>Most parts of the corridor are reasonably accessible to either the river Severn, river Stour, or the Staffordshire and Worcestershire canal. This could provide opportunities for sustainable transport movements. In addition, the corridor contains two railway lines. However, the use of more sustainable modes of transport is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination. The corridor, especially those parts to the west, does not have particularly good access to the motorway, but most parts are reasonably close to major A-roads. The location of the corridor relative to Kidderminster, Stourport and Bewdley means that these areas could be well served with minimal transport movements. The corridor could also provide minerals for the rural west of the county, although transport here is likely to involve longer journeys and there is no motorway or dual carriageway to the west. Therefore, the policy will have a minor positive uncertain effect on the SA objective.</p>
<p>SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all</p>	++/--?	<p>This corridor contains 5% of the county's key and significant terrace and glacial sand and gravel resources, 63% of the county's key and significant solid sand resource (including 52% of the Wildmoor Formation which contains silica sand resources) and 2% of the county's known former building stone quarries. This is a significant amount of the county's potential resources, and</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
share the benefits, urban and rural.		<p>allocating this corridor should help to facilitate the extraction and processing of sufficient resources for the development necessary for growth and infrastructure. The corridor relates well to potential end uses in Kidderminster, Stourport and Bewdley, as well as markets further afield, such as the Black Country and rural west of Worcestershire. The corridor is reasonably accessible to major A-roads, and so is well placed to serve local markets, but does not have universally easy access to the motorway network for longer-distance supply. The size of the corridor offers scope for multiple mineral developments and the beneficial economic effects they can bring, including to employment in the local rural and urban areas. However, the emerging Wyre Forest District Council Local Plan (Pre-Submission) includes proposed allocations for both mixed use and employment uses within this corridor, which could conflict with minerals development.</p> <p>Overall, the policy is likely to have mixed significant positive and significant negative uncertain effects on the SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+/--?	<p>This corridor contains 5% of the county's key and significant terrace and glacial sand and gravel resources, 63% of the county's key and significant solid sand resource (including 52% of the Wildmoor Formation which contains silica sand resources) and 2% of the county's known former building stone quarries. This is a substantial amount of the county's potential resources, and allocating this corridor should help to facilitate the extraction and processing of sufficient resources to deliver housing and the development needed to secure clean, safe and pleasant local environments. The corridor relates well to potential areas of housing development, including Kidderminster, Stourport and Bewdley, as well as markets further afield, such as the Black Country. The corridor is reasonably accessible to major A-roads, and so is well placed to serve local markets, but does not have universally easy access to the motorway network for longer-distance supply. This strategic corridor is located adjacent to a number of areas allocated for the provision of housing and the emerging Wyre Forest District Council Local Plan (Pre-Submission) includes proposed allocations for mixed use development within this corridor.</p> <p>Overall, the policy is likely to have a mixed minor positive and significant negative uncertain effect on the SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to</p>	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.		
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	Minerals development itself may offer potential opportunities to foster new technologies in extraction, processing and transport, but this policy will not, in itself, have any effect on this SA objective.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	+	<p>Part (c) of the policy seeks to encourage “incorporating information or routes which increase the legibility and understanding of the geodiversity heritage and character of the area”. This could provide opportunities for learning within the local community.</p> <p>Overall, the policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No effects on this SA objective have been identified.

Policy MLP 8: Salwarpe Tributaries Strategic Corridor

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	<p>++/-?</p>	<p>This strategic corridor is not located within an AONB. Depending on where development is located, minerals extraction could have a visual impact on the residential areas located within or adjacent to the corridor (e.g. the settlements of Belbroughton, Bluntington, Bournheath, Bromsgrove, Hartlebury, Ombersley, Cutnall Green, Droitwich Spa, Whychbold, Stoke Prior, and Upton Warren), as well as the public rights of way, National Cycle Route, and outdoor leisure/recreation sites within the area. The landscape and visual impacts of development within the corridor will vary according to proposals' specific locations, and the corridor is too large to enable any specific effects to be identified.</p> <p>The policy states that minerals development will be permitted where this "contributes towards the quality, character and distinctiveness of the corridor", which is expected to safeguard and strengthen landscape character, and avoid any significant adverse effects on the landscape. In addition, Priorities (a) and (b) of the policy seek to "conserve, enhance and restore characteristic hedgerow patterns and structure" and "protect, restore and link relic ancient woodlands and conserve and restore tree cover along watercourses and streamlines". This should help to ensure that elements of the landscape character are preserved and restored throughout the lifetime of the proposed development. Overall, it is likely that the policy will have a mixed significant positive and minor negative uncertain effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	<p>+/--?</p>	<p>The corridor contains seven SSSIs (Pipershill Common, Oakland Pasture, Feckenham Forest, Westwood Great Pool, Upton Warren Pools, Hurst Farm Pasture, Little Royal Farm Pastures), a National Nature Reserve (Chaddesley Woods), two Local Geological Sites (Madeley Heath and Hadley Quarry) and a number of Local Wildlife Sites. Because it is not known where development might occur within the corridor, specific likely effects on receptors cannot be predicted with certainty.</p> <p>The policy prioritises the "conservation, restoration and enhancement of hedgerow patterns and structure" and the "protection, restoration and linking of relic ancient woodlands and conserve and restore tree cover along watercourses and streamlines", which are likely to support biodiversity. In addition, the policy prioritises the "creation of accessible semi-natural greenspaces which incorporate information or routes which increase the legibility and understanding of ... geodiversity". These priorities should help to ensure that biodiversity and geodiversity assets are conserved and enhanced. As it is not yet known where the proposed sites will lie within the corridor, it is likely that the policy will have a mixed minor positive and significant negative uncertain effect on the SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/--?	<p>This strategic corridor contains six Conservation Areas (Belbroughton, Chaddesley Corbett, Upton Warren, Worcs and Birmingham Canal, Droitwich Link Canal, Dodford) and a large number of mainly Grade II listed buildings. Additionally, the corridor contains seven Grade I listed buildings (Heron's Tower, Westwood House, Falcon Tower, Nos. 1 and 2 The Gatehouse, Church of St Mary the Virgin, Hanbury Hall, and Church of St Michael). The corridor contains ten Scheduled Monuments (Moated site at Fairfield Court, Dodford Priory moated site, Moated site and fishponds, Churchyard cross at St Michael's Church, Medieval settlement immediately surrounding the St Michael's Church, Moated site immediately west of the Church of St Mary, Hawford Roman camp, Roman camp 430m east of Dodderhill Court Farm, Moated site at Tardebigge Farm, and Icehouse and ponds at Hanbury Hall), as well as two nationally registered historic parks and gardens (Westwood Park and Hanbury Hall). The corridor is also located directly adjacent to another nationally registered historic park and garden (Ombersley Court). The corridor contains eight locally important parks and gardens (Brockencote Hall, Hanbury Hall, Impney Park, Hadzor Hall, Westwood Park, High Park, Manor Farm, and Ombersley Park). This in itself does not mean that negative effects are likely, as the precise location of development in relation to any of these assets is not yet known. Although the historic environment forms a part of green infrastructure, it has not been instrumental in guiding the location of this strategic corridor, nor in the approach to its restoration. Landscape-scale restoration can help to improve the setting of the historic environment, and there are close linkages between landscape character and historic landscape character.</p> <p>In addition, part (d) of the policy seeks to encourage "incorporating information or routes which increase the legibility and understanding of the geodiversity, heritage and character of the area". This is likely to increase engagement with and understanding of the historic environment. Overall, mixed minor positive and significant negative uncertain effects are expected.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings,</p>	--?	<p>A very large proportion of this strategic corridor is located within the Green Belt. The NPPF states that "mineral extraction" and "engineering operations" are not inappropriate in the Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in Green Belt. Other forms of development associated with minerals, however, including some buildings, may be inappropriate development. As such, this corridor has the potential to conflict with this SA objective's aim of safeguarding Green Belt land.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
whilst safeguarding open space/green infrastructure.		<p>Agricultural land quality varies across the corridor, including Grades 1, 2, 3 and 4 agricultural land. Without knowing more about where development may take place, the corridor is too large to allow for specific judgements on the likely effect on agricultural land quality. There is no requirement to direct development to areas of lower quality agricultural land within the Salwarpe Tributaries Strategic Corridor policy, therefore development could lead to loss of best and most versatile agricultural land.</p> <p>Overall, the policy is likely to have a significant negative uncertain impact on the SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	--?	<p>A small but not insignificant proportion of the corridor falls within Source Protection Zone 3. It also includes areas of Source Protection Zone 2 and areas of Source Protection Zone 1. The corridor includes part of the Worcester Road, Wychbold AQMA. It is also reasonably close to the Hagley AQMA and, immediately beyond that, to the Dudley AQMA. The corridor partially surrounds Bromsgrove town, where the Worcester Road AQMA is found. The corridor is too large to identify specific effects from minerals development on the AQMAs or on air quality in general.</p> <p>Overall, the policy is likely to have a significant negative uncertain impact on the SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+?/?	<p>The exact climate change effects of minerals development can only be predicted once the location and detail of workings is known. The climate change effects will depend upon working practices and transport modes. Not enough is known about the sites to judge whether or not they could, for example, exploit opportunities for renewable energy. The corridor is, however, covered by a number of river networks, which suggests that suitable water links could be available. Furthermore, the corridor is serviced by three railway lines. However, the use of more sustainable modes of transport is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination.</p> <p>Priority (b) includes protecting, restoring and linking ancient woodlands and tree cover along watercourses and streamlines, which could help to ensure no significant loss of tree cover.</p> <p>Overall, the policy is likely to have a mixture of minor positive uncertain and uncertain effects on the SA objective.</p>
SA7: Flooding	+/?	<p>The corridor contains some relatively small areas of flood zone 3, including that associated with the river Salwarpe and the Hadley/Elmley Brook. In the context of the wider corridor, these areas are</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>		<p>relatively negligible, representing only a very small proportion of the corridor as a whole. Overall, it is considered unlikely that the policy itself will have significant effects on this SA objective, as many aspects of minerals development will not be "inappropriate" in these zones and it is unrealistic to seek to exclude them. The precise effects cannot be predicted without further detail on where development will occur within this corridor.</p> <p>Part (c) of the policy requires any proposed minerals development to prioritise "slow the flow of water in upper reaches and increase flood storage and floodplain connectivity in lower parts of the catchment", which will help to minimise flood risk.</p> <p>Overall, the policy is likely to have a mixed minor positive and unknown impact on the SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+/--?	<p>Public rights of way extend across the county in all areas, inside and outside the corridor. Development within the corridor could both threaten existing routes (although mitigation elsewhere in the plan should limit this), and improve them as part of green infrastructure enhancements during development and restoration. For this reason, the policy is likely to have a mixture of both minor positive and significant negative uncertain impacts on the SA objective.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	++/--?	<p>This strategic corridor contains and lies adjacent to a number of residential areas (e.g. the settlements of Belbroughton, Bluntingson, Bournheath, Bromsgrove, Hartlebury, Ombersley, Cutnall Green, Droitwich Spa, Wychbold, Stoke Prior, and Upton Warren), and contains a number of schools, places of worship, and outdoor leisure and recreation facilities. Minerals extraction within 100m of these sensitive receptors could therefore cause noise, dust, or other emissions. In the short term, effects on health and amenity may generally be expected to be negative. In the longer term, the MLP's approach of seeking green infrastructure enhancement should have correspondingly positive effects on health, which can be closely linked to GI (for example through the improved quantity of and/or accessibility to green space). Priority (d) includes the creation of accessible semi-natural green space, which would be a significant recreation resource in this area. Health impacts will be varied and very localised to each site. Overall the policy is likely to have a mixed significant positive and significant negative effect uncertain on the SA objective.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste</p>	-	<p>This strategic corridor contains a landfill site and a household recycling centre.</p> <p>In addition, this policy promotes the use of primary mineral extraction rather than encouraging the</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.		use of secondary minerals. Overall, a minor negative effect is likely.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+?	<p>The Worcester and Birmingham canal, and part of the Droitwich canal passes through the east of the corridor, but this has not been identified as a likely conduit for minerals transport, and the Tardebigge Flight of locks could make movement difficult. The corridor is, however, covered by a number of river networks, which suggests that suitable water links could be available. This strategic corridor also contains three railway lines. However, the use of more sustainable modes of transport is uncertain, as it will depend on loading/unloading facilities and route availability between source and destination. The corridor is very well served by the motorway network, with access to the M5 and M42. The corridor is not so large that there are areas with particularly poor access to the strategic transport network, helping to minimise transport emissions.</p> <p>Overall, the policy will have a minor positive uncertain effect on the SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+ +/ -?	<p>The corridor contains 14% of the county's Mercia Mudstone clay resource, 6% of the county's known former building stone quarries and 1% of the county's key and significant terrace and glacial sand and gravel resources. These are not such substantial proportions as are found in some of the other corridors, but will nevertheless help to facilitate the extraction and processing of sufficient resources for the development necessary for growth and infrastructure. The corridor relates well to potential end uses in Bromsgrove, Droitwich, and surrounding settlements, and also to settlements further afield including Redditch, Kidderminster, Worcester, and Stourport. Being largely accessible to the motorway network and major A-roads, it is well placed to serve local and wider markets. The size of the corridor offers scope for multiple mineral developments and the beneficial economic effects they can bring, including to employment in the local areas. However, this strategic corridor is located within 250m of two areas allocated for employment development.</p> <p>Overall, the policy is likely to have a mixed significant positive and minor negative uncertain impact on the SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in</p>	+ / - -?	<p>The corridor contains 14% of the county's Mercia Mudstone clay resource, 6% of the county's known former building stone quarries and 1% of the county's key and significant terrace and glacial sand and gravel resources. These are not such substantial proportions as are found in some of the other corridors, but will nevertheless help to facilitate the extraction and processing of sufficient resources</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
clean, safe and pleasant local environments.		<p>for the development necessary for growth and infrastructure. The corridor relates well to potential end uses in Bromsgrove, Droitwich, and surrounding settlements, and also to settlements further afield including Redditch, Kidderminster, Worcester, and Stourport. Being largely accessible to the motorway network and major A-roads, it is well placed to serve local and wider markets. The size of the corridor offers scope for multiple mineral developments and the beneficial economic effects they can bring, including to employment in the local area. However, this strategic corridor is located adjacent to a number of areas allocated for the provision of housing.</p> <p>Overall, the policy is likely to have a mixed minor positive and significant negative uncertain impact on the SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	Minerals development itself may offer potential opportunities to foster new technologies in extraction, processing and transport, but this policy will not, in itself, have any effect on this SA objective.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	+	<p>Part (d) of the policy seeks to encourage “incorporating information or routes which increase the legibility and understanding of the geodiversity, heritage and character of the area”. This could provide opportunities for learning within the local community.</p> <p>Overall, the policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA17: Population (crime & fear of crime)</p>	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
Reduce crime, fear of crime and antisocial behaviour.		

Policy MLP 9: Contribution of Substitute, Secondary and Recycled Materials and Mineral Waste to Overall Minerals Supply

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+/-?	<p>Increasing the use of substitute, secondary and recycled materials could potentially reduce the need for primary material and the development needed to extract and process it. This could reduce the need for large new incursions into the landscape, particularly as secondary and recycling facilities do not usually occur in isolation, as they may be located within existing construction/ demolition, mineral or waste management sites. Many of the works required to deliver this objective will fall under the Waste Core Strategy, and could be guided to existing industrial locations, rather than the open countryside locations of many minerals extraction developments. This could be beneficial from a landscape perspective, and a minor positive effect is identified.</p> <p>However, there may also be potential negative impacts on landscape as processing substitute, secondary and recycled materials could also require extensive plant and material storage, so a minor negative effect is also identified.</p> <p>The effects would be uncertain as they will depend on the exact nature and design of secondary/recycled facilities, which would not be known for new sites until the planning application stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+/-?	<p>Increasing the use of substitute, secondary and recycled materials could potentially reduce the need for primary material and the development needed to extract and process it. This could reduce the adverse effects on biodiversity, particularly as secondary and recycling facilities do not usually occur in isolation, as they may be located within existing construction/ demolition, mineral or waste management sites. Furthermore, making more use of substitute, secondary and recycled materials and mineral waste should help to ensure that the disturbance of habitats and geodiversity associated with primary minerals extraction is reduced. This could be beneficial to biodiversity and geodiversity, as they may remain undisturbed and so a minor positive effect is identified.</p> <p>However, there may also be potential negative impacts on designated sites, protected species or habitats as processing substitute, secondary and recycled materials could also require extensive plant and material storage, which could lead to disturbance effects from noise and vibration and impacts from dust and light pollution, so a minor negative effect is also identified.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>But this will depend upon the exact nature and location of the plant and so an uncertain effect is also identified. Another issue to consider is that the MLP is restoration-led, and the net gain sought for biodiversity and geodiversity would not be realised where development does not take place; whilst the same protection and enhancement policies would also apply to secondary minerals development, this may cover a smaller footprint and therefore offer fewer longer-term benefits.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/-?	<p>The use of recycled materials, in particular, should ensure that this policy makes a valuable contribution to this SA objective. Substitute, secondary and recycled aggregates may reduce demand for primary extraction which has potentially more adverse effects on historic environment, heritage assets and their setting. A minor positive effect is therefore identified.</p> <p>The policy is also likely to have minor negative effects on this SA objective, as some substitute/ secondary/ recycling aggregate facilities could affect nearby heritage assets and their setting due to noise and vibration associated with working as well as visual impacts as processing substitute, secondary and recycled materials could also require extensive plant and material storage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+	<p>This policy will help to reduce the need for primary minerals, thereby supporting this SA objective by safeguarding mineral reserves. The recycling of minerals, especially through re-using construction and demolition waste, could be seen as a form of maximising the reuse of vacant buildings, although this is not the intended meaning of the SA objective. Secondary minerals development could potentially threaten the Green Belt to a greater extent than some primary minerals development, as the NPPF (2018) only allows that (in relation to this sort of development) "mineral extraction" and "engineering operations" are not inappropriate in the Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in the Green Belt. The type of development associated with secondary minerals may well require buildings that would be inappropriate development.</p> <p>A minor positive effect is identified on this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+/-?	<p>This policy supports the increased provision of secondary minerals which may reduce the need for primary extraction and processing, and thereby minimise the risks associated with it and so a minor positive effect is identified.</p> <p>However, the development of facilities processing substitute, secondary and recycled aggregates may deliver their own risks. Crushing activities, especially, have the potential to generate significant amounts of dust, and plant is likely to have both incoming and outgoing lorry movements – potentially more than for a primary minerals development – that would generate dust and emissions, therefore a minor negative effect is also identified.</p> <p>Without knowing more details of what secondary minerals development will occur and where, the effects are uncertain.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+	<p>The use of secondary and recycled materials should help to conserve resources and reduce carbon emissions compared with primary extraction and processing. This may vary, however, according to each specific development; if a particular building stone or brick is transported, cleaned, and processed, this could potentially emit more emissions than simply producing a product from scratch. But such circumstances are likely to be exceptional. There is a significant amount of embodied energy in existing construction materials, and re-using these - even if additional energy inputs are needed - is likely to represent a carbon saving over extracting and processing new material.</p> <p>A minor positive effect is therefore identified on this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	-?	<p>Primary extraction, with its associated changes to landform and levels, may offer more scope to provide for enhanced flood storage as part of the green infrastructure restoration, whereas secondary minerals facilities may not offer such scope. Under the sequential test, minerals extraction is often classified as 'water-compatible development', but secondary minerals facilities are unlikely to be considered as such and could therefore have a minor negative effect. However, the effects of this policy on flooding are uncertain at this stage, as the location and design of any development is unknown.</p>
<p>SA8: Access to Services</p>	0	<p>No effects on this SA objective have been identified.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>		
<p>SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.</p>	<p>+/-?</p>	<p>This policy could potentially lead to an increase in transport movements and therefore vibrations, emissions and noise, as well as noise from crushing operations, where relevant. These effects could compromise health and amenity in the area local to the development(s), so a minor negative effect is identified. The scale and duration of these effects, however, cannot be known at this stage.</p> <p>In addition, an increase in the use and production of secondary and recycled aggregates could potentially contribute to a decrease in demand for primary aggregates, which would reduce the potential effects of primary extraction in the longer term. A minor positive effect is therefore expected, although this is also uncertain.</p> <p>Overall a mixed minor positive and minor negative uncertain effect is expected on this SA objective.</p>
<p>SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	<p>++</p>	<p>This SA objective is strongly supported by this policy, which seeks to ensure that waste materials, including mineral waste, are reused and recycled, avoiding them going to landfill.</p> <p>A significant positive effect is therefore expected on this SA objective.</p>
<p>SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.</p>	<p>+/-?</p>	<p>Secondary minerals provision could see a reduction in the need for primary minerals extraction and processing and its associated transport and so a minor positive effect is identified. However, secondary minerals facilities may require a greater number of vehicle movements, as material is moved both to sites for processing, and then from sites once processed, as such, a minor negative effect is expected on this SA objective.</p> <p>However, the effects would be uncertain as the potential for effects will depend on the exact nature and design of the substitute/ secondary/ recycled facilities, and their traffic levels, lorry routeing and access arrangements, which would not be known for new sites until the planning application stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+/-	<p>Substitute, secondary and recycled materials are important within new developments and encourage local markets to utilise alternatives to primary won material. This stimulation in local markets may attract more investment thus presenting opportunities for employment and so a minor positive effect is identified.</p> <p>In contrast, working substitute, secondary and recycled material could also limit the economic activity associated with primary extraction, so a minor negative effect is also identified.</p> <p>Overall a mixed minor negative and minor positive effect is identified on this SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	<p>The provision of local building stone through recycled aggregates could make a valuable contribution towards ensuring pleasant local environments, by maintaining local vernacular styles. Secondary minerals can also help to support the delivery of housing more generally (including affordable housing).</p> <p>A minor positive effect is identified on this SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	<p>No effects on this SA objective have been identified.</p>
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	<p>This policy does support resource efficiency, and may provide some opportunities for new technologies to be employed. In general, however, the processes to reuse and recycle materials and waste products are fairly well-established. Overall, any effects on this SA objective are not considered sufficient to warrant a positive effect against this SA objective, so a negligible effect is identified.</p>
<p>SA16: Population (skills and education)</p>	0	<p>No effects on this SA objective have been identified.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
Raise the skills levels of qualifications of the workforce.		
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No effects on this SA objective have been identified.

Policy MLP 10: Steady and Adequate Supply of Sand and Gravel

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	-?	The policy seeks to enable and encourage sufficient sand and gravel developments to come forward to deliver Worcestershire's identified requirements for sand and gravel. This policy is therefore likely to have a minor negative effect as the provision of sand and gravel could result in adverse impacts on landscape character and quality at numerous locations. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	-?	The policy seeks to enable and encourage sufficient sand and gravel developments to come forward to deliver Worcestershire's identified requirements for sand and gravel. This policy is therefore likely to have a minor negative effect as the provision of sand and gravel mineral sites could result in adverse impacts on biodiversity and geodiversity assets at numerous locations. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	-?	The policy seeks to enable and encourage sufficient sand and gravel developments to come forward to deliver Worcestershire's identified requirements for sand and gravel. This policy is therefore likely to have a minor negative effect as the provision of sand and gravel mineral sites could result in adverse impacts on the historic environment and/or historic assets at numerous locations. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+/-?	<p>Part (b) of the policy, which seeks to enable productive capacity for sand and gravel supply to be maintained or enhanced, supports that part of this SA objective concerned with the efficient use of land and safeguarding of mineral resources. Increasing productive capacity at a site can help to reduce the need to develop sites elsewhere, and can help to extract as much mineral resource from a site as possible, subject to other MLP safeguards. This approach will also help to safeguard open space. A minor positive effect is therefore identified.</p> <p>Conversely, a minor negative effect is also identified as the policy supports continued extraction of primary sourced minerals.</p> <p>The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the sand and gravel developments, which would not be known until the planning</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		application stage. Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.
SA5: Natural Resources Protect and enhance water and air quality.	-?	The policy seeks to enable and encourage sufficient sand and gravel developments to come forward to deliver Worcestershire's identified requirements for sand and gravel. A minor negative effect is identified as it supports the provision of sand and gravel mineral developments which could result in adverse impacts on water quality at these locations leading to a minor negative effect. Effects are uncertain as it will depend on the scale, location and operation of the extraction sites.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	+	Part (b) of the policy seeks to enhance productive capacity which could maximise the contribution from existing operations, thereby reducing the need for new sand and gravel sites. The reasoned justification states that one of the ways in which this enhancement of productive capacity could arise is through "more efficient plant, machinery and working practices at existing sites". This would be likely to have climate change and energy benefits, and therefore a minor positive effect on this SA objective.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+?	The policy seeks to enable and encourage sufficient sand and gravel developments to come forward to deliver Worcestershire's identified requirements for sand and gravel. This type of mineral development is classified as water-compatible and potentially suitable in all flood zones including 3b (the functional floodplain). Furthermore, these sites may also have the potential to increase flood capacity through their eventual restoration. A minor positive uncertain effect is identified on this SA objective.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	No effects on this SA objective have been identified.
SA9: Health and amenity Improve the health and well-being of the	-?	The policy seeks to enable and encourage sufficient sand and gravel developments to come forward to deliver Worcestershire's identified requirements for sand and gravel. Minor negative effects are

Sustainability Appraisal Objectives	SA Score	Potential effects
population and reduce inequalities in health.		identified as the policy supports the provision of new sand and gravel mineral sites which may have adverse impacts from their operations on the health and wellbeing of nearby communities. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.
SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	+/-?	<p>Part (b) of the policy, which seeks to enable productive capacity for sand and gravel supply to be maintained or enhanced, could help to reduce waste if this were to lead to existing productive capacity being maximised, thereby helping to reduce the need to develop sites elsewhere and so a minor positive effect is identified. The nature and extent of waste arisings however, remain unknown, and it cannot be assumed that these will necessarily be lower than at a new site therefore the effects are uncertain.</p> <p>A minor negative effect is also likely as the workings of sand and gravel pits would promote the use of primary mineral extraction rather than encourage the use of secondary minerals.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	+/-?	<p>Ensuring a steady and adequate supply of sand and gravel within Worcestershire should help to reduce the need for imported materials from outside the county. Depending on the location of the supply and where it is used, this could help to reduce the need for traffic and transport and so a minor positive effect is identified.</p> <p>However, it is unknown whether the transportation of sand and gravel will utilise either sustainable transport modes or the road network. If the road network is used, a minor negative effect is expected, although an uncertain effect is also identified as transport plans are unknown at this stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	+	The policy encourages the provision of adequate minerals to enable Worcestershire's growth. A minor positive effect is therefore identified as it could make some provision for additional sand and gravel mineral sites which will ensure a steady and adequate supply of minerals to meet the county's need and will encourage the growth of the minerals industry.
SA13: Provision of housing Provide decent affordable housing for all, of the	+?	The policy encourages adequate sand and gravel minerals that could contribute to the provision of housing. Part (b) of the policy encourages, at least in part, the enhancement of productive capacity,

Sustainability Appraisal Objectives	SA Score	Potential effects
right quality and tenure and for local needs, in clean, safe and pleasant local environments.		which could mean making greater use of existing sites. This could help avoid the need for additional sites, and the potential negative effects on clean, safe and pleasant local environments that these could bring. A minor positive effect is therefore identified. The nature of such effects, however, cannot be known at this stage, so the effect is uncertain.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	?	Part (b) of the policy encourages, at least in part, the enhancement of productive capacity, which could mean making greater use of existing sites. This could see the use of low-impact, resource-efficient technologies if such approaches are employed to maximise capacity, but whether such technology is likely to be used is impossible to predict at this stage, so an uncertain effect is identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No effects on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No effects on this SA objective have been identified.

Policy MLP 11: Steady and Adequate Supply of Crushed Rock

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	--?	<p>The policy enables applications for crushed rock development to come forward. But the supporting text observes that “there has been no crushed rock working in Worcestershire since 2010 and, at the end of 2016, there were no active crushed rock sites and no landbank of permitted reserves for crushed rock in Worcestershire”.</p> <p>A lack of crushed rock development could be beneficial to this SA objective in terms of reducing likely risk to designated landscapes. Chapter 2 (portrait of Worcestershire) of the MLP confirms that, apart from some smaller resources at Suckley, Abberley and Woodbury Hills, the crushed rock resource is concentrated within and around (and therefore likely to be within the setting of) Areas of Outstanding Natural Beauty (AONBs). As designated landscapes, the Cotswolds and Malvern Hills AONB enjoy the highest level of protection. When development comes forward to meet the ten year land bank (criterion ‘a’) the location of resources means that it may well be within these designated landscapes, so that the risk will continue and a significant negative effect is expected.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	-?	<p>There is likely to be limited development, given historic trends of zero tonnes per annum since 2010, which could help to conserve biodiversity and geodiversity through avoiding potential risks from development. However given the ten year landbank has been identified in criterion ‘a’, the supporting text notes there is flexibility for proposals to come forward, there is potential for adverse effects to arise on the county’s biodiversity and geodiversity assets. A minor negative effect is identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/-?	<p>Enabling a landbank of ten years could potentially contribute to resources needed to undertake repairs to Worcestershire's cultural heritage, architecture and archaeology assets, and a minor positive effect is expected.</p> <p>The policy allows for mineral developments for crushed rock to come forward through criterion ‘a’, so there is potential for these mineral workings to adversely affect heritage assets and/or their setting and therefore a minor negative effect is also identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+/-?	<p>Criterion 'a' of the policy, seeks to maintain a ten year landbank for crushed rock in the county and therefore supports the part of this SA objective concerned with the efficient use of land and safeguarding of mineral resources. A minor positive effect is therefore identified.</p> <p>Conversely, a minor negative effect is also identified as the policy supports continued extraction of primary sourced minerals. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	-?	<p>Criterion 'a' of the policy, seeks to maintain a ten year landbank for crushed rock in the county which could lead to consequent risks to water and air quality and so a minor negative effect is expected.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+/-?	<p>The policy enables applications for crushed rock development to come forward, although historic trends of zero tonnes per annum since 2010 could mean that crushed rock is likely to come from outside the county, which could mean longer transport distances and more emissions contributing to climate change (although not always, depending on the source of the crushed rock and its destination within Worcestershire). However, part (b) of the policy seeks to enhance productive capacity, which could maximise the contribution from existing operations, thereby reducing the need for new crushed rock sites. This would be likely to have climate change and energy benefits, and therefore is likely to have a minor positive effect on this SA objective.</p> <p>Effects are uncertain as it will depend on the location and transport routes to and from extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does</p>	+?/-?	<p>Mixed effects are expected (minor positive/minor negative) as enabling crushed rock mineral development could have an adverse effect on flooding if it occurs within flood zone 3b (the functional floodplain). However, these sites may also have the potential to increase flood capacity through their eventual restoration. Effects are uncertain as it will depend on the scale, location and design of the</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.		extraction sites.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	No effects on this SA objective have been identified.
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	-?	Criterion 'a' of the policy, seeks to maintain a ten year landbank for crushed rock in the county. Minor negative effects are identified as the policy supports the provision of crushed rock mineral developments which may have adverse impacts from their operations on the health and wellbeing of nearby communities. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.
SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	+/-?	Criterion 'a' of the policy, seeks to maintain a ten year landbank for crushed rock in the county. Part (b) of the policy, which seeks to enable productive capacity of crushed rock to be maintained or enhanced, could help to reduce waste if this were to lead to existing productive capacity being maximised, thereby helping to reduce the need to develop sites elsewhere. The nature and extent of waste arisings, however, remain unknown, and it cannot be assumed that these will necessarily be lower than at a new site therefore the effects are uncertain. A minor negative effect is likely as the workings of crushed rock developments would promote the use of primary mineral extraction rather than encourage the use of secondary minerals. Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	+/-?	Enabling a steady and adequate supply of crushed rock within Worcestershire should help to reduce the need for imported materials from outside the county, however, historic trends of zero tonnes per annum since 2010 could mean that crushed rock is still likely to come from outside the county, which could mean longer transport distances. Depending on the location of the supply and where it is used within the county, there could be either minor negative or minor positive effects depending on the

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>distance the crushed rock travels.</p> <p>It is also unknown whether the transportation of crushed rock will utilise either more sustainable transport modes or the road network. If the road network is used, a minor negative effect is expected, although an uncertain effect is also identified as transport plans are unknown at this stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+/-?	<p>The production guideline of zero will not encourage crushed rock provision within the county, although the policy does seek to facilitate any schemes that may come forward, which will encourage growth in the minerals industry, which may help to stimulate growth in the industry. However, the production guideline of zero is likely to mean that crushed rock remains an imported aggregate. Whilst the MLP seeks a steady and adequate supply, the reasoned justification acknowledges that this supply is unlikely to come from within Worcestershire. As such, the delivery of economic development and infrastructure projects could be compromised if timely, affordable supplies cannot be secured from elsewhere.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+?	<p>The policy encourages adequate crushed rock minerals that could contribute to the provision of housing (although it is recognised that these may continue to be imported following past trends). Part (b) of the policy encourages, at least in part, the enhancement of productive capacity, which could mean making greater use of previously existing sites. This could help avoid the need for additional sites, and the potential negative effects on clean, safe and pleasant local environments that these could bring. A minor positive effect is therefore identified. The nature of such effects, however, cannot be known at this stage, so these effects are uncertain.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	<p>No effects on this SA objective have been identified.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	?	<p>Part (b) of the policy encourages, at least in part, the enhancement of productive capacity, which could mean making greater use of existing sites. This could see the use of low-impact, resource-efficient technologies if such approaches are employed to maximise capacity, but whether such technology is likely to be used is impossible to predict at this stage, so an uncertain effect is identified.</p>
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	<p>No effects on this SA objective have been identified.</p>
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	<p>No effects on this SA objective have been identified.</p>

Policy MLP 12: Steady and Adequate Supply of Brick Clay and Clay Products

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	-?	<p>The policy seeks to enable a diverse range of brick clay and clay mineral developments to come forward to support existing or new sites. This policy is therefore likely to have a minor negative effect as the provision of brick clay and clay mineral sites could result in adverse impacts on landscape character and quality at numerous locations beyond the two clay sites currently in operation that are located within close proximity of one another. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	-?	<p>The policy seeks to enable a diverse range of brick clay and clay mineral developments to come forward to support existing or new sites. This policy is therefore likely to have a minor negative effect as the provision of brick clay and clay mineral sites could result in adverse impacts on biodiversity and geodiversity assets at numerous locations beyond the two clay sites in operation that are located within close proximity of one another. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/-?	<p>The policy seeks to enable a diverse range of brick clay and clay mineral developments to come forward to support existing or new sites. The provision of sufficient and different blends of bricks clay and clay products will be important in carrying out works to preserve and enhance the historic environment, therefore a minor positive effect is identified.</p> <p>In contrast, such an activity could potentially compromise assets under this SA objective and so a minor negative effect is also expected. These effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green</p>	+/-?	<p>Part (c) of the policy, which seeks to enable productive capacity for brick clay or clay products to be maintained or enhanced, supports that part of this SA objective concerned with the efficient use of land and safeguarding of mineral resources. Increasing productive capacity at a site can help to reduce the need to develop sites elsewhere, and can help to extract as much mineral resource from a site as possible, subject to other MLP safeguards. This approach will also help to safeguard open space. A minor positive effect is therefore identified.</p> <p>Conversely, a minor negative effect is also identified as it supports continued extraction of primary</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
infrastructure.		<p>sourced minerals.</p> <p>The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the brick clay developments, which would not be known until the planning application stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	-?	<p>The policy seeks to enable a diverse range of brick clay and clay mineral developments to come forward to support existing or new sites. A minor negative effect is identified as it supports the provision of clay and brick clay mineral development which could result in negative impacts on water quality at these locations.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+	<p>The policy seeks to enable a diverse range of brick clay and clay mineral developments to come forward to support existing or new sites. Part (c) of the policy seeks to enhance productive capacity, which could maximise the contribution from existing operations, thereby reducing the need for new clay sites. The reasoned justification states that one of the ways in which this enhancement of productive capacity could arise is through "more efficient plant, machinery and working practices at existing sites". This would be likely to have climate change and energy benefits, and is thereby a minor positive effect on this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+?/-?	<p>Mixed effects (minor positive/minor negative) are expected as clay and brick clay mineral development would be suitable in all flood zones, except 3b (the functional floodplain) where development could have an adverse effect on flooding. However, these sites may also have the potential to increase flood capacity through their eventual restoration.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of</p>	0	<p>No effects have been identified on access to services.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
age, gender, ethnicity, disability, socio-economic status or educational attainment.		
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	-?	<p>The policy seeks to enable a diverse range of brick clay and clay mineral developments to come forward to support existing or new sites. Minor negative effects are identified as the policy supports the provision of brick clay and clay mineral developments which may have adverse impacts from their operations on the health and wellbeing of nearby communities. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	+/-?	<p>Part (c) of the policy seeks to enable productive capacity for brick clay and clay products to be maintained or enhanced which could help to reduce waste if this were to lead to existing productive capacity being maximised, thereby helping to reduce the need to develop sites elsewhere. The nature and extent of waste arisings, however, remain unknown, and it cannot be assumed that these will necessarily be lower than at a new site therefore the effects are uncertain.</p> <p>A minor negative effect is likely as the workings of clay and brick clay developments would promote the use of primary mineral extraction rather than encourage the use of secondary minerals.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+/-?	<p>Ensuring a steady and adequate supply of brick clay and clay products within Worcestershire should help to reduce the need for imported materials from outside the county. Depending on the location of the supply and where it is used, this could help to reduce the need for traffic and transport and so a minor positive effect is identified.</p> <p>However it is unknown whether the transportation of brick clay and clay products will utilise either more sustainable transport modes or the road network. If the road network is used, a minor negative effect is expected, although an uncertain effect is also identified as transport plans are unknown at this stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA12: Growth with prosperity for all</p>	+	<p>Whilst the policy seeks to ensure a steady and adequate supply of brick clay and clay products, it</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.		does not specify what level is required. The reasoned justification states only that sales are running at approximately 126,000 tonnes per year and that "each of these clay workings has a stock of permitted reserves sufficient for the life of the plan". The policy encourages the diversification of clay and brick clay blends to come forward to enable Worcestershire's growth. A minor positive effect is therefore identified as it could make some provision for additional brick clay and clay mineral sites which will continue the steady and adequate supply of minerals to meet the county's need and will encourage the growth of the minerals industry.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+?	Whilst the policy seeks to ensure a steady and adequate supply of brick clay and clay products, it does not specify what level is required. The reasoned justification states only that sales are running at 126,000 tonnes per year and that this is "adequate to supply levels of demand in Worcestershire". The policy encourages the diversification of clay and brick clay blends to come forward that could contribute to the provision of housing. Part (c) of the policy encourages, at least in part, the enhancement of productive capacity, which could mean making greater use of previously existing sites. This could help avoid the need for additional sites, and the potential negative effects on clean, safe and pleasant local environments that these could bring. A minor positive effect is therefore identified. The nature of such effects, however, cannot be known at this stage, so this effect is uncertain.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and</p>	?	Part (c) of the policy encourages, at least in part, the enhancement of productive capacity, which could mean making greater use of existing sites. This could see the use of low-impact, resource-efficient technologies if such approaches are employed to maximise capacity, but whether such technology is likely to be used is impossible to predict at this stage, so an uncertain effect is identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
environmental technology initiatives.		
SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.	0	No effects on this SA objective have been identified.
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No effects on this SA objective have been identified.

Policy MLP 13: Steady and Adequate Supply of Silica Sand

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	-?	<p>The policy seeks to enable and encourage the steady and adequate supply of silica sand for industrial uses. The provision of silica sand mineral sites could result in adverse impacts on landscape character and quality at numerous locations beyond the existing one "active site" and one "inactive" site²⁰ which is an ancillary activity to the working of aggregate sand. Currently there is no industrial plant directly associated with either of these sites and the justification text to this policy asserts that there is "no indication that the operators of the current sites wish to invest in industrial plant to use silica sand" in the county, thereby limiting the adverse effects on Worcestershire's landscape. A minor negative effect is therefore identified on this SA objective.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	-?	<p>The policy seeks to enable and encourage the steady and adequate supply of silica sand for industrial uses. The provision of additional silica sand mineral sites could result in adverse impacts on biodiversity and geodiversity assets at numerous locations beyond the existing one "active site" and one "inactive" site²¹ which is an ancillary activity to the working of aggregate sand. Currently there is no industrial plant directly associated with either of these sites and the justification text to this policy asserts that there is "no indication that the operators of the current sites wish to invest in industrial plant to use silica sand" in the county, thereby limiting the adverse effects on Worcestershire's biodiversity and geodiversity. A minor negative effect is therefore identified on this SA objective.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-</p>	-?	<p>Silica sand is not generally used for building conservation purposes (and the policy only seeks to enable development for industrial uses), so the provision of steady and adequate supplies is unlikely to have a beneficial impact on this SA objective. In terms of possible negative effects arising from silica sand development sites, the provision of sand and gravel mineral sites could result in adverse</p>

²⁰ Sandy Lane Quarry (formerly Stanley N. Evans Ltd). "Inactive" sites are permitted minerals sites worked in the past and containing permitted reserves. A Review of Mineral Permission submission was required for this site by 20th March 2017 but was not submitted. Planning permission for the reserves at this site has therefore expired and the site is undergoing restoration.

²¹ Sandy Lane Quarry (formerly Stanley N. Evans Ltd). "Inactive" sites are permitted minerals sites worked in the past and containing permitted reserves. A Review of Mineral Permission submission was required for this site by 20th March 2017 but was not submitted. Planning permission for the reserves at this site has therefore expired and the site is undergoing restoration.

Sustainability Appraisal Objectives	SA Score	Potential effects
efficient development which respects local character and distinctiveness.		<p>impacts on the historic environment and/ or historic assets at numerous locations beyond the existing one "active site" and one "inactive" site²² which is an ancillary activity to the working of aggregate sand. Currently there is no industrial plant directly associated with either of these sites and the justification text to this policy asserts that there is "no indication that the operators of the current sites wish to invest in industrial plant to use silica sand" in the county, thereby limiting the adverse effects on Worcestershire's historic environment. A minor negative effect is therefore identified on this SA objective.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+/-?	<p>Part (b) of the policy, which seeks to enable productive capacity for silica sand for industrial uses to be maintained or enhanced, supports that part of this SA objective concerned with the efficient use of land and safeguarding of mineral resources. Increasing productive capacity at a site can help to reduce the need to develop sites elsewhere, and can help to extract as much mineral resource from a site as possible, subject to other MLP safeguards. This approach will also help to safeguard open space. A minor positive effect is therefore identified.</p> <p>Conversely, a minor negative effect is also identified as it supports continued extraction of primary sourced minerals.</p> <p>The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the silica sand developments, which would not be known until the planning application stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	-?	<p>The policy seeks to enable and encourage the steady and adequate supply of silica sand for industrial uses. The provision of silica sand mineral developments could result in adverse impacts on water quality at these locations leading to a minor negative effect. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>

²² Sandy Lane Quarry (formerly Stanley N. Evans Ltd). "Inactive" sites are permitted minerals sites worked in the past and containing permitted reserves. A Review of Mineral Permission submission was required for this site by 20th March 2017 but was not submitted. Planning permission for the reserves at this site has therefore expired and the site is undergoing restoration.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+	<p>Part (b) of the policy, in seeking to enhance productive capacity, could maximise the contribution from existing operations, thereby reducing the need for new silica sand sites. In addition, part (a) of the policy requires "Supporting investment in developing, maintaining or improving new or existing plant and equipment". This would be likely to have climate change and energy benefits, and therefore a minor positive effect on this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+?/-?	<p>The policy seeks to enable and encourage the steady and adequate supply of silica sand for industrial uses. Mixed effects (minor positive/minor negative) are expected as the provision of silica sand mineral development would be suitable in all flood zones, except 3b (the functional floodplain) where development could have an adverse effect on flooding. However, these sites may also have the potential to increase flood capacity through their eventual restoration.</p> <p>Effects are uncertain as they will depend on the scale, location and design of the extraction sites.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	0	<p>No effects have been identified on access to services.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	-?	<p>The policy seeks to enable and encourage the steady and adequate supply of silica sand for industrial uses. Minor negative effects are identified as the policy supports the provision of silica sand mineral developments which may have adverse impacts from their operations on the health and wellbeing of nearby communities.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	+/-?	<p>Part (b) of the policy seeks to enable productive capacity for silica sand for industrial uses to be maintained or enhanced which could help to reduce waste if this were to lead to existing productive capacity being maximised, thereby helping to reduce the need to develop sites elsewhere. The nature and extent of waste arisings, however, remain unknown, and it cannot be assumed that these will necessarily be lower than at a new site.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>The workings of silica sand mineral developments would promote the use of primary mineral extraction rather than encourage the use of secondary minerals. These effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+/-?	<p>Ensuring a steady and adequate supply of silica sand for industrial uses within Worcestershire should help to reduce the need for imported materials from outside the county. Depending on the location of the supply and where it is used, this could help to reduce the need for traffic and transport.</p> <p>However it is unknown whether the transportation of silica sand to industrial plant off site will utilise either more sustainable transport modes or the road network. If the road network is used, a minor negative effect is expected, although an uncertain effect is also identified as transport plans are unknown at this stage.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+	<p>Whilst the policy seeks to ensure a steady and adequate supply of silica sand for industrial uses, this may depend on the continued operation of just two existing sites. The introductory text in chapter 5 refers to the importance of ensuring that "there is enough flexibility to ensure that demand can be met even if natural events or commercial decisions limit production at one or more site(s)" and that "large landbanks at very few sites do not stifle competition". It could be said that two large sites does open the possibility of these risks, although the level of any risk is unclear. Indeed, the reasoned justification recognises that "the overall security of Worcestershire's productive capacity could be put at risk by commercial decisions or natural events at any individual site". The policy enables silica sand development to come forward which could contribute to the adequate supply of minerals to meet the county's need and will encourage the growth of the minerals industry. A minor positive effect is therefore identified.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	?	<p>Whilst the policy seeks to ensure a steady and adequate supply of silica sand for industrial uses, it does not call for such supply for house building and conventional construction. Silica sand may be used as an aggregate, but this is not an ideal use for a material with a more specific market. The linkages between silica sand supply and housing delivery are therefore unclear and so an uncertain effect is identified on this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	?	Part (b) of the policy encourages, at least in part, the enhancement of productive capacity, which could mean making greater use of existing sites. This could see the use of low-impact, resource-efficient technologies if such approaches are employed to maximise capacity, but whether such technology is likely to be used is impossible to predict at this stage, so an uncertain effect is identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No effects on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No effects on this SA objective have been identified.

Policy MLP 14: Adequate and Diverse Supply of Building Stone

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	-?	<p>The policy seeks to enable and encourage an adequate and diverse supply of building stone. Although there are no active building stone sites at present, the justification text asserts that demand may rise during the life of the Minerals Local Plan. This policy is therefore likely to have a minor negative effect as the provision of building stone mineral sites could result in adverse impacts on landscape character and quality at numerous locations and so a minor negative effect is identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	-?	<p>The policy seeks to enable and encourage an adequate and diverse supply of building stone. Although there are no active building stone sites at present, the justification text asserts that demand may arise during the life of the Minerals Local Plan. This policy is therefore likely to have a mixed effect (minor positive/minor negative) as the provision of building stone mineral sites could result in adverse impacts on biodiversity and geodiversity assets at numerous locations and so a minor negative effect is identified. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/-?	<p>The provision of building stone will be important in carrying out works to preserve and enhance the historic environment, as well as in enabling new architectural proposals to be realised. The policy, in facilitating developments to allow this, will support this SA objective and so a minor positive effect is identified.</p> <p>In contrast, such an activity could potentially compromise assets under this SA objective, and so a minor negative effect is also expected. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-</p>	+/-?	<p>Part (b) of the policy, which seeks to enable productive capacity for different types of building stone to be maintained or enhanced, supports that part of this SA objective concerned with the efficient use of land and safeguarding of mineral resources. Increasing productive capacity at a site can help to reduce the need to develop sites elsewhere, and can help to extract as much mineral resource from a site as possible, subject to other MLP safeguards. This approach will also help to safeguard open</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.		<p>space. A minor positive effect is therefore identified.</p> <p>Conversely, a minor negative effect is also identified as it supports extraction of a primary sourced mineral that is not currently worked in the county.</p> <p>The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the building stone developments, which would not be known until the planning application stage. Overall a mixed minor negative uncertain and positive effect is identified on this SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	-?	<p>The policy seeks to enable and encourage an adequate and diverse supply of building stone. Although there are no active building stone sites at present, the justification text asserts that demand may rise during the life of the Mineral Local Plan. A minor negative effect is identified as it supports the provision of building stone mineral development which could result in negative impacts on water quality at these locations.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+	<p>Part (b) of the policy, in seeking to enhance productive capacity, could maximise the contribution from existing operations, thereby reducing the need for new building stone sites. The reasoned justification states that one of the ways in which this enhancement of productive capacity could arise is through "more efficient plant, machinery and working practices over the life of any sites which are developed". This would be likely to have climate change and energy benefits, and therefore a minor positive effect on this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+?/-?	<p>Mixed effects (minor positive/minor negative) are expected as supporting building stone mineral development would be suitable in all flood zones, except 3b (the functional floodplain) where development could have an adverse effect on flooding. However, these sites may also have the potential to increase flood capacity through their eventual restoration.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA8: Access to Services</p>	0	<p>No effects have been identified on access to services.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.		
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	-?	<p>The policy seeks to enable and encourage an adequate and diverse supply of building stone. Although there are no active building stone sites at present, the justification text asserts that demand may arise during the life of the Mineral Development Plan. Minor negative effects are identified as the policy supports the provision of building stone mineral developments which may have adverse impacts from their operations on the health and wellbeing of nearby communities. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	+/-?	<p>Part (b) of the policy, which seeks to enable productive capacity for building stone to be maintained or enhanced, could help to reduce waste if this were to lead to existing productive capacity being maximised, thereby helping to reduce the need to develop sites elsewhere. The nature and extent of waste arisings, however, remain unknown, and it cannot be assumed that these will necessarily be lower than at a new site.</p> <p>A minor negative effect is likely as the workings of building stone developments would promote the use of primary mineral extraction although the justification text notes the use of the “demolition of existing structures” encourage the use of secondary minerals.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	+/-?	<p>Ensuring an adequate and diverse supply of building stone within Worcestershire should help to reduce the need for imported materials from outside the county. Depending on the location of the supply and where it is used, this could help to reduce the need for traffic and transport and so a minor positive effect is identified.</p> <p>However it is unknown whether the transportation of building stone will utilise either more sustainable transport modes or the road network. If the road network is used, a minor negative effect is expected, although an uncertain effect is also identified as transport plans are unknown at</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		this stage. Overall a mixed minor negative uncertain and minor positive effect is identified on this SA objective.
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	Although building stone can be used in the construction of infrastructure and buildings for economic development – especially in those buildings requiring building stone as part of their architectural design – it is not generally an essential requirement for their construction, and is used primarily for aesthetic value. As such, whilst there could be a very slight beneficial effect, a negligible effect is considered likely for this SA objective.
SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	+	Whilst building stone is not essential in the direct delivery of housing, it can be very important in delivering "decent housing... of the right quality...in ...pleasant local environments". This will be especially important in sensitive locations where there is a strong history of building stone. As such, a minor positive effect is identified on this SA objective.
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No effects on this SA objective have been identified.
SA15: Technology, innovation and inward investment Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	?	Part (b) of the policy encourages, at least in part, the enhancement of productive capacity, which could mean making greater use of existing sites. The reasoned justification refers to the possibility of "more efficient plant, machinery and working practices over the life of any sites which are developed". This could see the use of low-impact, resource-efficient technologies if such approaches are employed to maximise capacity, but whether such technology is likely to be used is impossible to predict at this stage, so an uncertain effect is identified.
SA16: Population (skills and education) Raise the skills levels of qualifications of the	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
workforce.		
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No effects on this SA objective have been identified.

Policy MLP 15: Supply of Other Locally and Nationally Important Industrial Minerals

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. The type and location of these resources, and the development that would be required to extract and process them, remain unknown at this stage. However when mineral developments come forward, they can lead to adverse landscape impacts so a minor negative effect is identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. The type and location of these resources, and the development that would be required to extract and process them, remain unknown at this stage. However when mineral developments come forward they can lead to adverse impacts to habitats and species so a minor negative effect is identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. The type and location of these resources, and the development that would be required to extract and process them, remain unknown at this stage. However, when mineral developments come forward they can lead to adverse effects on cultural heritage assets so a minor negative effect is identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+/-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources and could therefore have a minor positive effect in relation to safeguarding of mineral reserves. However, because the policy supports continued extraction of primary sourced minerals, and as the policy makes no reference to conserving the best and most versatile land, maximising previously developed land or safeguarding open space/green infrastructure, a minor negative effect is also identified.</p> <p>The negative effect identified is uncertain as it will depend on the scale, location and design of the extraction sites.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. A minor negative effect is identified as the policy supports the provision of mineral development which could result in negative impacts on water quality.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. The type and location of these resources, and the development that would be required to extract and process them, remain unknown at this stage, and so likely effects on this SA objective cannot be predicted.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+?/-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. Mixed effects (minor positive/minor negative) are expected as all types of mineral development, excluding sand and gravel extraction, would be suitable in all flood zones, except 3b (the functional floodplain) where development could have an adverse effect on flooding. However, these sites may also have the potential to increase flood capacity through their eventual restoration.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	0	<p>No effects have been identified on access to services.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. Minor negative effects are identified as the policy supports the provision of mineral development which may have adverse impacts from their operations on the health and wellbeing of nearby communities. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	-	The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. A minor negative effect is likely as the mineral developments would promote the use of primary mineral extraction rather than encourage the use of secondary minerals.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+/-?	<p>The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. Although the type, location, and use of such minerals is currently unknown, the policy to provide for these minerals within the county may prevent the need to import such minerals from outside the county, thereby reducing transport movements, so a minor positive effect is identified. The precise nature of any benefits on traffic and transport will depend upon where such minerals are found inside and outside the county in relation to their markets and it is unknown whether the transportation of minerals will utilise either more sustainable transport modes or the road network. If the road network is used, a minor negative effect is expected, although an uncertain effect is also identified as transport plans are unknown at this stage.</p> <p>Overall an mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+	The policy plans for the unknown, and this can be seen as a prudent measure to ensure that future industrial opportunities are provided for. As such, a minor positive effect is identified for this SA objective.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	?	The policy seeks to enable the sustainable supply of other locally and nationally important industrial mineral resources. The type and location of these resources, and the development that would be required to extract and process them, remain unknown at this stage, and so likely effects on this SA objective cannot be predicted.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life,</p>	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
encouraging pride and social responsibility in the local community.		
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No effects on this SA objective have been identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No effects on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No effects on this SA objective have been identified.

Policy MLP 16: Supply of Energy Minerals

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. As such, development that could compromise landscape character and introduce negative visual impact could come forward. Section 50 of the Infrastructure Act 2015 prevents hydraulic fracturing from taking place within "other protected areas", and the Onshore Hydraulic Fracturing (Protected Areas) Regulations 2015 definition of "other protected areas" includes Areas of Outstanding Natural Beauty. As such, minerals development would not be expected to take place within an AONB-. As such, a minor negative effect is therefore identified on this SA objective.</p> <p>The minor negative effects identified would be uncertain as the potential for effects will depend on the exact nature, design and location of the energy developments, which would not be known until the planning application stage.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. As energy developments could have potential impacts not similar to most mineral operations (e.g. transport, noise, lighting, dust, and pollution) which could negatively affect designated sites, protected species or habitats, minor negative effects are expected for this SA objective.</p> <p>The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the energy developments, which would not be known until the planning application stage.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which</p>	-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. This may lead to minor negative effects on the historic environment, heritage assets and their setting as operations associated with permitted</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
respects local character and distinctiveness.		<p>developments can be intensive, due to the methods of working (i.e. drilling, water usage at high pressure, traffic volumes). There is also unlikely to be the potential for developments to uncover and help preserve historic features or findings thereby not being able to contribute towards conserving and enhancing Worcestershire’s historic environment.</p> <p>The effects would be uncertain as the potential for effects will depend on the exact nature, design and location of the energy developments, which would not be known until the planning application stage.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+/-?	<p>The supporting text for this policy explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. Nevertheless, the policy would allow for a supply of energy minerals to come forward and could therefore have a minor positive effect in relation to safeguarding of mineral reserves. However, there is no reference within the policy wording that seeks to protect the best and most versatile agricultural lands, land of Green Belt value or open space/green infrastructure. As such a mixed minor positive and minor negative uncertain effect is identified.</p> <p>The negative effect would be uncertain as the potential for effects will depend on the exact nature, design and location of the energy developments, which would not be known until the planning application stage.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. A minor negative effect is identified as it supports the provision of energy mineral developments which could result in adverse impacts on water quality leading to a minor negative effect.</p> <p>Effects are uncertain as they will depend on the scale, location and design of the extraction sites.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency</p>	--?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
and energy generated from renewable energy and low-carbon sources.		for a supply of energy minerals to come forward. Coal, oil, and gas are all fossil fuels, the burning of which contributes to emissions that cause and worsen climate change. As such, development that could exacerbate climate change and support high-carbon energy could come forward from this policy so a significant negative effect is identified on this SA objective. Effects are uncertain as it will depend on the scale, location and design of the extraction sites.
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+?/-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. As such, development could come forward in high-risk flood-prone areas and/or which could contribute to flooding elsewhere and so a minor negative effect is likely on this SA objective.</p> <p>It is recognised that the extraction of energy minerals, with its associated changes to landform and levels, may offer scope to provide for enhanced flood storage as part of the green infrastructure restoration, so a minor positive effect is also identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p> <p>Overall a mixed minor negative uncertain and minor positive uncertain effect is identified on this SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	0	No effects have been identified on access to services.
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	-?	The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. The provision of energy mineral developments

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>may have adverse impacts from their operations on the health and wellbeing of nearby communities so a minor negative effect is identified.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy does allow for a supply of energy minerals to come forward. Oil and gas exploration produces waste such as drill cuttings, drilling fluid and sediment. A minor negative effect is therefore identified, although these effects are uncertain as it will depend on the scale, location and design of the energy sites.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+/-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward and so there is potential for increased traffic movements associated with energy developments.</p> <p>However, it is unknown whether the transportation of energy resources will utilise either more sustainable transport modes or the road network. If the road network is used, a minor negative effect is expected, although an uncertain effect is also identified as transport plans are unknown at this stage.</p> <p>Overall an mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+/-?	<p>Energy supplies are crucial in enabling economic development, and developing supplies within the county could help with energy security. However, most businesses and other energy-intensive infrastructure are connected to the national grid and so any supplies would be likely to be part of a wider distribution network. To a certain extent this will divorce the location of the energy supply from its eventual end use. The extraction of coal, oil and gas could offer local employment opportunities and so a minor positive effect is expected.</p> <p>Increasing carbon costs and corporate social responsibility may make fossil fuel use less attractive to business in the longer term, but restrictions e.g. on shale gas – which may lead to</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>lower prices (although estimates vary) – could hamper economic growth so a minor negative effects are predicted.</p> <p>Effects are uncertain as it will depend on the scale, location and design of the extraction sites plus external economic factors.</p> <p>Overall an uncertain mixed minor negative uncertain and minor positive effect is identified on this SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. As such, development could potentially compromise clean and pleasant local environments, and a minor negative effect is identified. The effect is uncertain as it will depend on the scale, location and design of the energy development.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	<p>No effects on this SA objective have been identified.</p>
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	-?	<p>The supporting text explains that “this policy does not seek to enable coal extraction and would only enable on-shore oil and gas development should resources be discovered in the county and licenced under future Onshore Oil and Gas Licensing Rounds”. However, the policy would allow for a supply of energy minerals to come forward. As such, opportunities to promote and support resource-efficient technologies could be compromised and so a minor negative effect is identified. The effect however is uncertain as it will depend on the scale, location and design of the energy development.</p> <p>The development of shale gas, for example, could make use of new technologies. This potential benefit is limited however, by the low probability of shale gas being a viable resource in</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		Worcestershire, with the reasoned justification stating that "There are no known locally or nationally important energy mineral resources within Worcestershire". As such, this benefit has been discounted.
SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.	0	No effects on this SA objective have been identified.
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No effects on this SA objective have been identified.

DM Policies

Policy MLP 17: Prudent Use of Resources

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	++	<p>Part (c)vi of the policy seeks to “protect and enhance inherent landscape character” of a proposed minerals development site. The policy also reinforces that throughout the lifetime of the development, there is a need to “manage or mitigate impacts on the built, historic, natural and water environment and amenity.” This wording would help ensure that any adverse visual impacts on the natural environment will be avoided or mitigated.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	+	<p>Although there should be positive effects from Part (c)vii: “manage or mitigate impacts on the...natural environment”, it is likely that the benefits to biodiversity and geodiversity will be realised on a site-by-site basis. Therefore, only a minor positive effect is expected on this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>Although there should be positive effects from Part (c)vii: “manage or mitigate impacts on the...built, historic environment”, it is likely that the benefits to cultural heritage assets will be realised on a site-by-site basis. Therefore, only a minor positive effect is expected on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green</p>	+	<p>The requirement to balance maximising extraction with any benefits of allowing sterilisation of some of the resource in Part (c) of the policy helps to ensure that mineral reserves are safeguarded and managed effectively. Part (c)iv of the policy states that proposed development will take account of “the ability to deliver high-quality restoration at the earliest opportunity”.</p> <p>The policy’s requirement for “the need to manage or mitigate impacts on the built, historic, natural and water environment and amenity” should help to ensure that land is used efficiently. There is, however, no consideration for the maximisation of previously developed land or reuse of vacant</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
infrastructure.		buildings. Therefore, only a minor positive effect is expected on this SA objective.
SA5: Natural Resources Protect and enhance water and air quality.	+	Part (c)vii of the policy seeks to manage or mitigate impacts on the built, historic, natural and water environment and amenity. Therefore, it is likely to have a direct positive effect on water quality, but an indirect effect on air quality as it is likely that mitigating the impacts on the wider environment as required in this part of the policy should help to reduce any potential air pollution impacts. Overall a minor positive effect is expected on this SA objective.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	++	Climate change adaptation is an important aspect of all future developments. This policy addresses this with Part (b), "optimise on-site energy generation from renewable and low carbon sources". The inclusion of this requirement should help to ensure that the proposed development uses sustainable energy throughout its lifetime. Overall a significant positive effect is expected on this SA objective.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	Although there is no specific policy requirement which addresses flood risk from the proposed minerals development, the policy does state that there is a need to "manage or mitigate impacts on the ...water environment and amenity". This should reduce the likelihood that developments adversely contribute to fluvial flood risks. Overall a minor positive effect is expected on this SA objective.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	No impacts on this SA objective have been identified.
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	+	Part (c)vii of the policy seeks to "manage or mitigate impacts on the built, historic, natural and water environment and amenity." This should include the management of wastewater and pollutants that may arise from mineral workings and development. Overall, this should provide indirect benefits to the health and well-being of the local community as good water quality and air quality will be

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>maintained throughout the lifetime of the proposed development.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	+	<p>The policy requires that any proposed development will “minimise use of water and energy in buildings, plant and transport”. In addition, the policy states that proposed developments will have “the ability to deliver high-quality restoration at the earliest opportunity.” Part (c) v also requires account to be taken of the appropriateness of importing fill materials onto site and the reasoned justification for the policy further explains that the use of materials from within the site (such as overburden and sub soils) should be prioritised before considering imported materials, and that issues such as transport, water quality, local amenity, and the legislation, policy, and/or permitting issues concerning landfill should be considered. These references employ the ‘reduce’ and ‘recovery’ aspects of the waste hierarchy, and would have a minor positive effect on this SA objective.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+	<p>Although there is no reference to a shift towards more sustainable travel patterns, the policy does highlight that any proposed development will “minimise use of water and energy in buildings, plant and transport”. Therefore the policy has potential to contribute to the uptake of sustainable transportation modes.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	<p>No impacts on this SA objective have been identified.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	0	<p>Part (c)vii of the policy seeks to “manage or mitigate impacts on the built, historic, natural and water environment and amenity.” This will contribute to the supply of safe and pleasant local residential environments. However, as the direct benefits of this policy are small, the effects on this SA objective are negligible.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No impacts on this SA objective have been identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 18: Green Belt

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>The Green Belt forms an important part of the rural landscape in Worcestershire. The policy seeks to safeguard the Green Belt from inappropriate mineral development by highlighting that the proposed development should not conflict with the key purposes of the Green Belt.</p> <p>The policy does not, however, make any reference to strengthening the landscape character of the Green Belt, as the policy merely seeks to protect the openness of the Green Belt.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+/?	<p>Part (a) of the policy seeks to "preserve the openness of the Green Belt". This is likely to include indirect benefits for biodiversity and geodiversity, as habitats and open spaces will be safeguarded from inappropriate minerals development.</p> <p>The policy does not, however, attempt to enhance biodiversity or geodiversity within the Green Belt. In addition, the policy wording is unclear as to whether the strong weighting of Green Belt policy will compromise areas with biodiversity and geodiversity value that lie outside of the Green Belt, as these areas may be at risk from future minerals development sites. Therefore the effects of this policy on the SA objective are uncertain, however it is likely that the policy will have a mixed minor positive and uncertain effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+/?	<p>Part (a) of the policy seeks to "preserve the openness of the Green Belt". This is likely to include indirect benefits to cultural heritage assets, as the historic environment will be safeguarded from inappropriate minerals development.</p> <p>The policy does not, however, attempt to enhance cultural heritage assets within the Green Belt. In addition, the policy wording is unclear as to whether the strong weighting of Green Belt policy will compromise historic environments and assets that lie outside of the Green Belt, as these may be at risk from future minerals development sites. Therefore the effects of this policy on the SA objective are uncertain, however it is likely that the policy will have a minor positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and</p>	+	<p>The policy requires any proposed development to "not conflict with the purposes of including land within the Green Belt." This includes part (a) of the policy which seeks to "preserve the openness of the Green Belt".</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.		This policy effectively safeguards all Green Belt land and areas of high quality agricultural land and open spaces that may be within the Green Belt from inappropriate development but does not safeguard other areas of versatile agricultural lands or open spaces outside of the Green Belt. For this reason, it is likely that the policy will have a minor positive effect on the SA objective.
SA5: Natural Resources Protect and enhance water and air quality.	+/?	In preserving the openness of the Green Belt from inappropriate minerals development, it is likely that both water and air quality will be protected. There is, however, no requirement which addresses the enhancement of water and/or air quality. Therefore the effects of this policy on the SA objective are uncertain, however it is likely that the policy will have a minor positive effect on the SA objective.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	+	Preserving the openness of the Green Belt indirectly helps to mitigate the effects of climate change by retaining the land for carbon sequestration purposes. The policy does not, however, seek to promote energy efficiency or renewable energy sources. Overall, the policy will have a minor positive effect on the SA objective.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	Safeguarding the Green Belt will help to limit the increase of impermeable surfaces, which may be associated with minerals development, and cumulatively, increase flood risk within the catchment. Therefore the policy will have an indirect minor positive effect on the SA objective.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+	Preserving the openness of the Green Belt from inappropriate minerals development indirectly enables people to access the countryside and get the health benefits of doing so. Therefore this policy will have an indirect minor positive effect on this SA objective have been identified.
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	0	No impacts on this SA objective have been identified.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	-?	<p>Although this policy seeks to preserve the Green Belt, it does not prevent all mineral development coming forward in this designation, but could prevent some developments, depending on the specific circumstances. There is a risk that this could lead to developments coming forward in less sustainable locations, which may include locations that are further from intended markets.</p> <p>Therefore, depending on the location of any minerals working relative to transport networks, this could lead to longer journeys from source to market and/or less sustainable transport methods being used. However effects are uncertain, as effects depend on the exact location of minerals development.</p> <p>Therefore, minor negative uncertain effects have been identified for this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	No impacts on this SA objective have been identified.
<p>SA13: Provision of housing</p>	+	This policy is likely to provide safe and pleasant local environments through the preservation of the

Sustainability Appraisal Objectives	SA Score	Potential effects
Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.		Green Belt, however the policy is unlikely to contribute to the provision of housing. Overall a minor positive effect is expected on this SA objective.
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No impacts on this SA objective have been identified.
SA15: Technology, innovation and inward investment Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	0	No impacts on this SA objective have been identified.
SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.	0	No impacts on this SA objective have been identified.
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No impacts on this SA objective have been identified.

Policy MLP19: Amenity

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>The policy requires the mitigation of visual amenity and visual intrusion, which will directly help to meet the safeguarding element of this SA objective. The policy does not, however, provide for the strengthening of landscape, as it recognises that negative impacts may arise, albeit "the development will not cause unacceptable harm to sensitive receptors".</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+	<p>Although the policy is not directly concerned with biodiversity and geodiversity, many of the sensitivities envisaged by the policy apply equally to natural environment receptors, as well as to humans. Certain wildlife, for example, may be particularly sensitive to light, and reducing any light pollution will benefit all types of receptors. Similarly, geodiversity sites can be susceptible to the build-up of dust, which can obscure their geological interest, so any measures to mitigate dust will be of wide-ranging benefit. Air quality, odour, noise and vibration can all potentially affect environmental assets to a greater or lesser extent, and so the mitigation of these, should also help to support this SA objective. The policy is therefore positive in terms of the conservation element of this SA objective. Therefore, a minor positive effect is expected for this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>This objective will be supported by the policy because the historic environment and local distinctiveness can be compromised by some or all of the various types of pollution mentioned. Historic England²³ recognises that "Noise, odour, vibration, dust etc." are among those factors which can affect the setting of an historic asset. The mitigation measures will therefore help to deliver the preservation element of this SA objective. The policy does not, however, provide for any enhancement, and focuses only on reducing harm to an acceptable level, meaning that some degree of harm – even if very minor – could occur.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through</p>	0	<p>The policy's requirement to address matters of health and wellbeing and areas of tranquillity, as well as some other issues (including air quality) can help to contribute to the safeguarding of green</p>

²³ Historic England (December 2017) The Setting of Heritage Assets (2nd Edition): Historic Environment Good Practice Advice in Planning: 3. Available at: <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/>

Sustainability Appraisal Objectives	SA Score	Potential effects
safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.		infrastructure. However, overall the indirect nature of this is considered too minor to allow a positive rating, and so no overall effect has been recorded against this SA objective.
SA5: Natural Resources Protect and enhance water and air quality.	+	This policy directly supports part of SA objective 5 through requiring the mitigation of negative impacts on air quality throughout the life of the development. Whilst this should help to protect air quality, it does not include enhancement of air quality. Overall a minor positive effect is expected on this SA objective.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	0	No impacts on this SA objective have been identified.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	No impacts on this SA objective have been identified.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+	<p>As with SA objective 5, the policy will help to reduce negative health and wellbeing impacts, and although it is unlikely to lead to actual improvements, an indirect minor positive effect is expected on this SA objective.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	+	<p>Waste associated with mineral sites often arises from the fine sediments associated with processing. The generation and movement of these wastes can be a source of noise and dust, and so the minimisation of noise and dust can, in turn, mean the minimisation of waste. In addition, criterion 'h' should help to minimise levels of contamination caused by mineral waste. The policy is therefore likely to support, albeit indirectly, the achievement of the waste hierarchy.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+	<p>As with SA objective 10, this policy could indirectly help to deliver this SA objective. The policy specifically refers to the impacts associated with transport and, as transport can give rise to dust, noise, vibration and air quality impacts (as well as, to a lesser extent, impacts on odour, light, levels of contamination and visual amenity and intrusion), the minimisation of these will necessarily mean the minimisation of unnecessary transport movements.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	<p>There may be some very indirect benefits arising from this policy as a result of skills in pollution control and prevention being developed, but this is too minor to register as an impact for SA purposes. Overall, a negligible effect is likely.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	<p>This policy will help to ensure that minerals operations are 'good neighbours' to those houses which may be in close proximity. By minimising the emission of pollutants, this will help to ensure that minerals sites and their surroundings are clean, safe and pleasant local environments. The policy does state that "the development should cause no unacceptable harm" to sensitive receptors. However, what is and is not "unacceptable" will vary on a case-by-case basis, but it is possible that some degree of negative impact on the cleanliness and safety of local environments – even if very minor - could occur.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		Overall a minor positive effect is expected on this SA objective.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	There may be some very indirect benefits arising from this policy as a result of new technologies being developed and employed to realise the policy's aims, but this is too minor to register as an impact for SA purposes. Overall, a negligible effect is likely.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	There may be some very indirect benefits arising from this policy as a result of skills levels and qualifications in pollution and health being supported, but this is too minor to register as an impact for SA purposes. Overall, a negligible effect is likely.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP20: Access and Recreation

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>The policy seeks to safeguard landscape character, as the proposed development must “optimise the provision of publicly accessible green space, integrating other green infrastructure components where appropriate”. In addition, the proposed development must “protect and enhance public rights of way”. This should help to ensure that any rights of way or green spaces take landscape and visual impact into account.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	+	<p>The policy does not explicitly identify the need for new or amended rights of way or publicly accessible greenspace to conserve and enhance biodiversity and geodiversity. Part (a) does, however, seek to integrate "other green infrastructure components", which include biodiversity and geodiversity. The reasoned justification does make clear, at 12.61, that public access "may need to be restricted in some areas, for example ... to protect ... sensitive habitats". This helps to ensure that all biodiversity and geodiversity assets are taken into account, however, there is no reference to ensuring that these assets are conserved and enhanced. Overall, a minor positive effect is expected on this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>The policy does not explicitly identify the need for new or amended rights of way or publicly accessible greenspace to preserve and enhance the historic environment. Part (a) does, however, seek to integrate "other green infrastructure components", of which the historic environment could be one (e.g. historic landscapes, historically significant rights of way). The reasoned justification does make clear, at 6.61 (third bullet point), that opportunities should consider “the impact of proposed new routes or accessible green spaces on the natural and historic environment”. Overall, a minor positive effect is expected on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-</p>	+	<p>Rights of way and publicly accessible greenspace are key elements of green infrastructure, so the strong protection of these will help to satisfy the part of this SA objective that seeks to safeguard open space and green infrastructure. The provision of footpaths is unlikely to compromise agricultural land or the Green Belt to any meaningful degree.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.		Overall a minor positive effect is expected on this SA objective.
SA5: Natural Resources Protect and enhance water and air quality.	0	No impacts on this SA objective have been identified.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	0	No impacts on this SA objective have been identified.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	No impacts on this SA objective have been identified.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	++	This policy is directly concerned with improving the quality of and access to rights of way and greenspace, which are considered to be part of the suite of 'recreation facilities' and/or 'services' (or a means of accessing services) under this SA objective and are valuable at a local and national level. Part a) of the policy, which focuses on enhancing rights of way and public access to greenspace, will help to ensure that these contribute to the health and well-being of the community (as quoted in the second bullet point of paragraph 6.61 of the reasoned justification). Therefore, this policy is likely to have a significant positive effect on the SA objective.
SA9: Health and amenity Improve the health and well-being of the	++	Rights of way and publicly accessible greenspace can help people to become healthy and stay healthy, through encouraging outdoor exercise. As noted in the second bullet point of paragraph 6.61 of the reasoned justification, enhancing rights of way and public access to greenspace will further

Sustainability Appraisal Objectives	SA Score	Potential effects
population and reduce inequalities in health.		contribute to the health and well-being of the community. The policy's strong support for these assets should contribute to meeting this SA objective. Overall, this policy is likely to have a significant positive effect on the SA objective.
SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	0	No impacts on this SA objective have been identified.
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	++	Rights of way can provide valuable routes for movement, and can encourage people to walk for shorter journeys whereas they might otherwise use a car or other less sustainable means. Overall, this policy is likely to have a significant positive effect on this SA objective.
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	No impacts on this SA objective have been identified.
SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	+	Rights of way and publicly accessible greenspace can help to contribute to a pleasant local environment. Housing that has easy access to recreational routes may be more appealing and offer residents more opportunity to stay active. Overall a minor positive effect is expected on this SA objective.
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No impacts on this SA objective have been identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP21: Biodiversity

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>Although not concerned directly with landscape, the policy does seek to protect habitats that form a key part of the landscape - particularly ancient woodland and veteran trees, through criterion 'f' which discourages proposed mineral developments from resulting in the "loss or deterioration of individual aged or veteran trees". As such, the policy should support that part of the SA objective which seeks to safeguard landscape character and quality. The requirement to integrate "other green infrastructure components where appropriate" should also have a positive effect on the landscape, which is a key part of green infrastructure.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	++	<p>The policy seeks to protect, enhance and conserve biodiversity, and, as such, it strongly supports this SA objective. The policy highlights that any proposed development should not result in the "loss or deterioration of irreplaceable habitats" and must deliver net biodiversity gains.</p> <p>The policy is constrained to an extent by national and international legislation and policy, and within this context it does manage to set a positive framework for biodiversity.</p> <p>Although there is a standalone policy on geodiversity, this policy also provides a positive context for protecting geological assets, as SSSIs (protected by part (d) of the policy) include biological as well as geological sites, and "other green infrastructure components" can include geodiversity.</p> <p>Overall a significant positive effect is expected on this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>The policy indirectly supports elements of this SA objective, as many of the habitats will form part of the settings of historic environment assets. It also provides a positive context for enhancing the historic environment, which can be part of the "other green infrastructure components" that are referred to in criterion 'a' of this policy.</p> <p>Overall a minor positive effect is expected on this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green</p>	+	<p>The policy will have no significant effects on most parts of this SA objective, although it does seek to ensure that green infrastructure is safeguarded and, as such, warrants a minor positive rating, particularly on mineral proposals coming forward on greenfield land. Overall a minor positive effect is expected on this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.		
SA5: Natural Resources Protect and enhance water and air quality.	+	Flora, fauna and habitats can be particularly sensitive to water and air quality, and so the protection of biodiversity is often closely linked to the protection of water and air quality. The policy is therefore likely to support, albeit indirectly, the protection sought by the SA objective. The policy includes less of a focus on enhancement, however, so this part of the SA objective may not be as strongly supported as it could be. Overall a minor positive effect is expected on this SA objective.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	+	Flora, fauna and habitats can be sensitive to changes in climate, and may need to migrate to cope with the effects of climate change. In protecting biodiversity and seeking net gain in green infrastructure, this policy should help to ensure species are able to adapt to climate change. Overall, it is considered that a minor positive effect is likely for this SA objective.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	The requirement to integrate other green infrastructure components where appropriate should help to ensure that flooding is taken into account. Overall a minor positive effect is expected on this SA objective.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	+	Habitat protection is not always compatible with public access. Although habitats and access are both key parts of our green infrastructure, there may be occasions when it is necessary to prevent access within and around specific sensitive receptors. As such, this policy could have both a positive and a negative effect on parts of this SA objective, depending on the circumstances. Overall, it is likely that the enhancement of green infrastructure will improve access, as restricted access remains the exception, so a minor positive effect is identified on this SA objective.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+	Health and wellbeing can be supported by access to green infrastructure, which this policy seeks to enhance. As above, however, there will be circumstances where access is welcomed, and circumstances where access is necessarily restricted. Overall, it is likely that the enhancement of green infrastructure will improve access and, by extension, will contribute to health and amenity, so a minor positive effect is expected on this SA objective.
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	0	No impacts on this SA objective have been identified.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+	The provision of green infrastructure can enhance access opportunities, and allow people to travel more sustainably for short journeys. Notwithstanding the occasional potential conflict between access and site protection, which could lead to access restrictions in some cases, overall it is considered that a minor positive impact on this SA objective is appropriate.
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	No impacts on this SA objective have been identified.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	The provision of green infrastructure and the protection and enhancement of biodiversity can help to create and maintain pleasant local environments. This will be especially important in areas close to mineral workings. Overall, a minor positive effect is likely.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life,</p>	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
encouraging pride and social responsibility in the local community.		
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No impacts on this SA objective have been identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP22: Historic Environment

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>The landscape within which a historic environment asset sits can be an important part of its setting. This policy, in seeking to protect and enhance the historic environment, may have secondary positive impacts on landscape and visual impact. Part (b) and (c), in preventing harm to any designated or non-designated assets, will help to safeguard (but not strengthen) landscape character and quality and minimise negative visual impact. Part (a) of the policy seeks to integrate "other green infrastructure components where appropriate", which can include the landscape. As such, the policy is likely to have a minor positive effect in relation to this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+	<p>The policy is unlikely to have any significant direct effects on this SA objective, but part (c)'s requirement to integrate "other green infrastructure components where appropriate" could be positive for biodiversity, which is a key part of green infrastructure. As such, the policy is likely to have a minor positive effect in relation to this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	++	<p>The policy sets out to ensure the protection and enhancement of the historic environment and, as such, should secure significant benefits in relation to this SA objective. However, parts (b) and (c) allow that some degree of loss to some assets may occur, and are more about limiting harm than achieving net gain.</p> <p>Part (a) does make provision for opportunities to enhance the historic environment.</p> <p>Part (d) affirms that any heritage assets lost during the development process should be recorded, and our understanding of the heritage asset should be advanced during this process.</p> <p>Overall, this policy is likely to have a significant positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green</p>	+	<p>There are unlikely to be significant direct impacts on this SA objective, but part (a) of the policy does seek to integrate "other green infrastructure components where appropriate", and so will help to support this element of the objective. As such, the policy is likely to have a minor positive effect in relation to this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
infrastructure.		
SA5: Natural Resources Protect and enhance water and air quality.	0	Although there may be some minor secondary benefits on this SA objective arising from the integration of other green infrastructure components, overall it is considered that the effect will be negligible.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	+/-?	The positive focus on green infrastructure should help to mitigate and adapt to climate change. However, it is possible that opportunities to develop renewable and low-carbon energy on a minerals site could be limited by the need to protect and enhance the historic environment. As such, this policy could have both minor positive and minor negative uncertain impacts on the SA objective, depending on the specific circumstances of each development.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	The integration of other green infrastructure components may offer some benefits to this SA objective, but overall this is considered to be a negligible effect.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	The integration of other green infrastructure components may offer some benefits to this SA objective, but overall this is considered to be a negligible effect.
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	0	The integration of other green infrastructure components may offer some benefits to this SA objective, but overall this is considered to be a negligible effect.
SA10: Waste	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.		
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	0	The integration of other green infrastructure components may offer some benefits to this SA objective, but overall this is considered to be a negligible effect.
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	No impacts on this SA objective have been identified.
SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	+	The historic environment can make a valued contribution to pleasant local environments, and as such, a minor positive effect is considered likely for this SA objective.
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No impacts on this SA objective have been identified.
SA15: Technology, innovation and inward investment Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
environmental technology initiatives.		
SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.	0	No impacts on this SA objective have been identified.
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No impacts on this SA objective have been identified.

Policy MLP 23: Landscape

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	++	<p>The policy strongly supports the safeguarding and strengthening of landscape character and quality by requiring the protection, conservation and enhancement of landscape character. Part (b) refers to two landscape characterisation evidence documents, stating that balance should be sought when weighing up the benefits of the development against the landscape character set out in the relevant documents. Part (c) is positively worded, and ascribes great weight to conserving Areas of Outstanding Natural Beauty, unless the proposed development is in the public interest.</p> <p>Overall, this policy is likely to have a significant positive effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+	<p>The policy does not directly concern biodiversity, although it does recognise in part (a) that landscape is part of green infrastructure, and the integration of "other green infrastructure components" should help to ensure positive outcomes for biodiversity.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	++	<p>Landscape is a part of the cultural and historic environment, and this policy requires development to "protect, conserve and enhance the character and distinctiveness of the landscape". The landscape can be a key element in the setting of the historic environment, and this policy should help to ensure that this setting is protected and enhanced. The policy specifically seeks to enhance landscape character and contribute to local distinctiveness, which accord very strongly with this SA objective.</p> <p>Overall, this policy is likely to have a significant positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+	<p>The policy will have no significant effects on most parts of this SA objective, although it does seek to ensure that development integrates green infrastructure components where appropriate and, as such, is likely to have a minor positive effect.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
SA5: Natural Resources Protect and enhance water and air quality.	0	Although there should be positive indirect effects on air and water quality as a result of this policy's focus on integrating other green infrastructure assets, this is not considered sufficient to warrant a likely positive effect in relation to this SA objective. Overall, a negligible effect is likely.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	+/-?	The positive focus on green infrastructure should help to mitigate and adapt to climate change. However, it is possible that opportunities to develop renewable and low-carbon energy on a minerals site could be limited by the need to protect and enhance landscape character, as landscape is a common reason for refusal of energy applications. As such, this policy could have both positive and negative uncertain impacts on the SA objective, depending on the specific circumstances of each development.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	Although there should be positive indirect effects on flood prevention and mitigation as a result of this policy's focus on integrating other green infrastructure assets, this is not considered sufficient to warrant a likely positive effect in relation to this SA objective. Overall, a negligible effect is likely.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	Although there should be positive indirect effects on access to services as a result of this policy's focus on integrating other green infrastructure assets, this is not considered sufficient to warrant a likely positive effect in relation to this SA objective. Overall, a negligible effect is likely.
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	0	Although there should be positive indirect effects on health and amenity as a result of this policy's focus on integrating other green infrastructure assets, this is not considered sufficient to warrant a likely positive effect in relation to this SA objective. Overall, a negligible effect is likely.
SA10: Waste Manage waste in accordance with the waste	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.		
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	0	Although there should be positive indirect effects on traffic and transport as a result of this policy's focus on integrating other green infrastructure assets, which should support access and recreation and therefore more sustainable travel patterns, this is not considered sufficient to warrant a likely positive effect in relation to this SA objective. Overall, a negligible effect is likely.
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	No impacts on this SA objective have been identified.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	High-quality distinctive landscapes are a valuable part of ensuring a pleasant local environment. This will be especially important in areas close to mineral workings. Overall, this policy is likely to have a minor positive effect on the SA objective.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and</p>	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
environmental technology initiatives.		
<p>SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 24: Soils

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+/-	The stripping and storing of soils and other arisings, especially through storage and bunds, are likely to result in landscape and visual impacts. These may be negative, or may offer a means of mitigating other harm (such as screening unsightly operations from sensitive receptors). Therefore, the policy is likely to have a mixed minor positive and minor negative effect overall on this SA objective.
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	+/-	The stripping and storing of soils and other arisings can affect existing habitats and geodiversity and can create new habitats and reveal undiscovered geodiversity features. Therefore, the policy is likely to have a mixed minor positive and minor negative effect overall on this SA objective.
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	?	<p>The stripping and storing of soils and other arisings can potentially affect the historic environment (for example by compromising the setting of a listed building close to the minerals site, or conversely by protecting its setting from other noise and visual impacts).</p> <p>Therefore, the policy is likely to have an uncertain effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+	<p>The policy does state that proposed mineral development should “retain all soils within the site” and “make appropriate provision for the re-use of soils.” This helps to ensure that soils are efficiently used, which helps safeguard the best and most versatile land and, over time, helps to safeguard green infrastructure.</p> <p>In contrast, the policy does not seek to safeguard Green Belt land.</p> <p>Overall, the policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+	The stripping and storing of soils and other arisings can potentially affect water and air quality, but appropriate soil management as required by the policy should help to reduce the adverse impacts of soil compaction and erosion, which would indirectly reduce water pollution.

Sustainability Appraisal Objectives	SA Score	Potential effects
		Overall, a minor positive effect is likely.
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+	Soil is a valuable carbon store, and its disturbance can release climate-change causing carbon dioxide into the atmosphere. The policy's requirement for the conservation of soil resources should help to reduce the causes of climate change, and as such the policy is likely to have a minor positive effect in relation to this SA objective.
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+	<p>The stripping and storing of soils and other arisings can potentially affect flooding, by changing the landform or through soil compaction, but appropriate soil management as required by the policy should help to reduce the adverse impacts of soil compaction and erosion, which would indirectly reduce surface water run-off and flood risk.</p> <p>Overall, a minor positive effect is likely.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	0	No impacts on this SA objective have been identified.
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+/-	The stripping and storing of soils and other arisings and the use of material in screening by forming bunds or other landscape features can help to reduce the impact on the local environment and have a minor positive effect on the health and well-being of the local community. Conversely, the inappropriate siting and size of such features may be detrimental to local environments and so a minor negative effect is also identified.
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling</p>	+	The stripping and storing of soils and other arisings can potentially be a way of managing waste. If that waste is used to create temporary bunds or to help restore the landform post-extraction, then elements of this may constitute re-use or recovery, and part (b) iv of the policy requires minerals developments to make appropriate provision for re-use of soils. Therefore, the policy is likely to have

Sustainability Appraisal Objectives	SA Score	Potential effects
and composting, 4) recovery, 5) disposal.		a minor positive effect on this SA objective.
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	+	The conservation of soil resources should help to ensure that soils and other arisings are retained and managed on site, thereby reducing the need to move them elsewhere and so a minor positive effect is identified.
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	No impacts on this SA objective have been identified.
SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	+/-	<p>The stripping and storing of soils and other arisings and the use of material in screening by forming bunds or other landscape features can help to reduce the impact on the local environment through screening noise and visual impacts and so a minor positive effect is identified.</p> <p>Conversely, the inappropriate siting and size of such features may be detrimental to local environments and so a minor negative effect is also identified.</p>
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No impacts on this SA objective have been identified.
SA15: Technology, innovation and inward investment Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 25: Best and Most Versatile Agricultural Land

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>Requiring the integration of other green infrastructure components where the proposed after use includes agriculture should allow for landscape benefits to be realised, as landscape is a key part of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+	<p>Requiring the integration of other green infrastructure components where the proposed after use includes agriculture should allow for biodiversity and geodiversity benefits to be realised, as biodiversity and geodiversity assets are key components of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>Requiring the integration of other green infrastructure components where the proposed after use includes agriculture should allow for cultural heritage benefits to be realised, as heritage assets can be a component of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+	<p>The policy seeks to safeguard best and most versatile agricultural land whilst facilitating minerals extraction and processing. These two aims may be difficult to reconcile, as some degree of soil disturbance is likely, and the disturbance is likely to be negative. In absolute terms, minerals extraction is likely to reduce agricultural land quality, at least in the short term, and it may be difficult for technical or policy reasons to re-establish this land at the same quality. The policy's prioritisation of lower-quality agricultural land, and requirement for long-term potential to be maintained, should help to meet this part of the SA objective. The policy does not seek to safeguard Green Belt land. The policy does seek to integrate "green infrastructure components, where the proposed after use includes agriculture", which accords with the green infrastructure elements of this SA objective.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
SA5: Natural Resources Protect and enhance water and air quality.	0	No impacts on this SA objective have been identified.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	+	Safeguarding the long term potential of best and most versatile agricultural land and requiring the integration of other green infrastructure components where the proposed after use includes agriculture would indirectly contribute to adapting to the effects of climate change, particularly with regard to reducing flood risk. Therefore, this policy is likely to have a minor positive effect on the SA objective.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	Safeguarding the long term potential of best and most versatile agricultural land and requiring the integration of other green infrastructure components where the proposed after use includes agriculture should help to reduce fluvial flood risk. Therefore, this policy is likely to have a minor positive effect on the SA objective.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	No impacts on this SA objective have been identified.
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	0	No impacts on this SA objective have been identified
SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling	0	No impacts on this SA objective have been identified

Sustainability Appraisal Objectives	SA Score	Potential effects
and composting, 4) recovery, 5) disposal.		
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	0	No impacts on this SA objective have been identified
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	No impacts on this SA objective have been identified.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	?	<p>Requiring the integration of other green infrastructure components where the proposed after use includes agriculture should help to deliver safe and pleasant local environments, however this does not take account of the quality of the local environment during the period when the proposed development makes use of poorer quality agricultural land.</p> <p>Overall, the effect on this SA objective is unknown.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 26: Geodiversity

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>Requiring the integration of other green infrastructure components where appropriate should allow for landscape benefits to be realised, as landscape is a key part of green infrastructure. Significant direct benefits on this SA objective are, however, unlikely to arise from this policy.</p> <p>Overall, this policy is likely to have an indirect, minor positive effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	++	<p>The policy should go some way to conserving and enhancing geodiversity, but the focus is on minimising the negative effects, rather than securing net gains in the quality and quantity of geodiversity assets.</p> <p>Part (a) of the policy seeks to enhance both the physical condition and understanding of geological assets, as the policy states that the proposed development will: "optimise opportunities to improve the condition, legibility and understanding of geodiversity". This should ensure that the asset itself remains protected and that the value of the geological asset is preserved through the use of interpretation boards and information sheets throughout the lifetime of the proposed development.</p> <p>As such, overall, this policy is likely to have a significant positive effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>Geodiversity is a key part of local character and distinctiveness. The policy should contribute to the conservation of this resource and the enhancement of the geological asset, as the policy states that any proposed development will "optimise opportunities to improve the legibility ... of geodiversity."</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green</p>	+	<p>The policy will have no significant effects on most parts of this SA objective, although it does seek to ensure that development integrates with green infrastructure and, as such, overall, this policy is likely to have a minor positive effect on the SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
infrastructure.		
SA5: Natural Resources Protect and enhance water and air quality.	0	No impacts on this SA objective have been identified.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	0	No impacts on this SA objective have been identified.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	0	No impacts on this SA objective have been identified.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	0	Although geodiversity assets may not be traditionally thought of as local services or facilities, they are nevertheless part of the green infrastructure network that provides a valuable recreation and educational resource. In seeking to "optimise opportunities to improve the condition, legibility and understanding of geodiversity", the policy may help to improve the quality of access to these facilities, and could contribute to this SA objective, although in too minor a way to justify a positive effect. A negligible effect is therefore identified as the policy does not seek to improve access to geodiversity assets; greater access may or may not be desirable, depending on the circumstances.
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	0	No impacts on this SA objective have been identified.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	0	No impacts on this SA objective have been identified.
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	No impacts on this SA objective have been identified.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	In seeking to improve the condition, legibility and understanding of geodiversity, the policy could contribute to pleasant local environments, especially in cases where green infrastructure has been integrated into the proposed development. As such a minor positive effect is expected in relation to this SA objective.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new</p>	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.		
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	+	<p>The policy would help to improve the legibility and understanding of geodiversity which may help to educate people on the history and management of geological assets. Furthermore where development would result in unavoidable loss of geological features evidence and any archive relating to these features should be made publicly accessible. A minor positive effect is therefore expected in relation to this SA objective.</p>
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	<p>No impacts on this SA objective have been identified.</p>

Policy MLP 27: Water Quality and Quantity

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>Requiring the integration of other green infrastructure components where appropriate should allow for landscape benefits to be realised, as landscape is a key part of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+	<p>Biodiversity depends on a healthy environment, including a sufficient quality, quantity and flow of surface water and groundwater resources. The policy should help to ensure that negative impacts on water are reduced and mitigated, but there is less focus on securing net gains in quality and quantity. Part A calls for opportunities to enhance groundwater and surface water resources, and this should have minor resulting benefits on biodiversity. Any likely impacts on geodiversity are unclear at this stage. Requiring the integration of other green infrastructure components where appropriate should also help to realise biodiversity and geodiversity benefits, as landscape is a key part of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>Requiring the integration of other green infrastructure components where appropriate should help to realise historic environment benefits, as the historic environment is a key part of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green</p>	+	<p>The policy will have no significant effects on most parts of this SA objective, although it does seek to ensure that development integrates with green infrastructure and, as such, is likely to have a minor positive effect.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
infrastructure.		
SA5: Natural Resources Protect and enhance water and air quality.	++	<p>The policy should help to protect water quality. Part (b) of the policy should help to meet the SA objective as it requires the proposed development to not have an “unacceptable effect on the quality, quantity or flow of ground or surface water”.</p> <p>Although it is unlikely to have an effect on air quality, this policy is likely to have a significant positive effect on the SA objective in relation to water quality.</p>
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	0	No impacts on this SA objective have been identified.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	+	<p>The policy, especially part (b), should help to meet this SA objective. Part B of the policy includes that the proposed development “should not have an adverse effect on the flow of surface or groundwater”.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	+?	<p>Part (a)’s requirement to integrate other green infrastructure components where appropriate could help to improve quality of and equitable access to services, particularly if this includes rights of way. However, given that this relates primarily to enhancing surface and groundwater, it is uncertain whether this policy will lead to improvements to rights of way.</p> <p>Overall, this policy is likely to have a minor positive uncertain effect on the SA objective.</p>
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	+	Water quality, and the protection of groundwater resources, is crucial to human health. As with many of the other SA objectives, this policy should help to reduce harm to water quality, although actual improvements may be more limited, as it is only addressed in the first part of the policy which seeks

Sustainability Appraisal Objectives	SA Score	Potential effects
		to "protect and enhance the quality, quantity and flow of surface water and groundwater resources". Overall, this policy is likely to have a minor positive effect on the SA objective.
SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	0	No impacts on this SA objective have been identified.
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	0	No impacts on this SA objective have been identified.
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	No impacts on this SA objective have been identified.
SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	+	In seeking to enhance the quality and quantity of surface water and groundwater, the policy could help to ensure that local environments remain clean, safe and pleasant. A minor positive effect is therefore expected in relation to this SA objective.
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No impacts on this SA objective have been identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 28: Flooding

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>Requiring the integration of other green infrastructure components where appropriate should allow for landscape benefits to be realised, as landscape is a key part of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire’s biodiversity and geodiversity.</p>	+	<p>Biodiversity depends on a healthy environment, including regulated surface water and groundwater flows. The policy should help to ensure that flooding impacts are reduced and mitigated. Part (a) calls for proposed developments to “integrate other green infrastructure components where appropriate”, which could include new habitats and wildlife corridors. This policy is therefore likely to have a minor positive effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>The main relationship between water and the historic environment is in the risk posed by flooding to an asset's historic fabric. Part (a) and (c) of the policy, in seeking to reduce the causes and impacts of flooding, should help to reduce the potential for harm to heritage assets. Requiring the integration of other green infrastructure components where appropriate should also help to realise historic environment benefits, as the historic environment can be a part of green infrastructure.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	+	<p>The policy will have no significant effects on most parts of this SA objective, although it does seek to ensure that development integrates with green infrastructure and, as such, is likely to have a minor positive effect on the SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+	<p>The policy should help to protect water quality through the integration of green infrastructure components and sustainable drainage systems. However, the bulk of this policy is primarily concerned with mitigating flood risk, and so it is unlikely that the policy will help to enhance water</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		quality. Overall, this policy is likely to have a minor positive effect on the SA objective.
SA6: Climate Change and energy Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.	+	The policy should help to adapt to climate change as manifested by increased flood risk as the policy seeks to reduce the causes and impacts of flooding and take account of climate change when assessing the potential impacts of the proposed development on flood risk. It does not address energy efficiency and renewable energy. Overall, this policy is likely to have a minor positive effect on the SA objective.
SA7: Flooding Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.	++	The policy would directly meet this SA objective. The policy ensures that there will be no increased flooding risks to "people and property on site or elsewhere" from the proposed mineral development. Part (e) reiterates this point by adding that that the proposed development will not "increase flooding risk elsewhere". This preventative policy ensures that there will be no additional fluvial flooding elsewhere within the catchment. This policy is reinforced by Policy MLP 27: Water Quality and Quantity, which seeks to ensure that any proposed development does not have an adverse effect on surface water and groundwater flows. Further positive effects could result from recognising that proposed development could contribute to increasing flood storage where appropriate. Overall, this policy is likely to have a significant positive effect on the SA objective.
SA8: Access to Services Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.	+	Making sure that flood risk is not increased elsewhere is beneficial for maintaining access to services. Part (a) sets out that mineral development proposals should "optimise opportunities to reduce the causes and impacts of flooding". Furthermore, Part (a) also requires mineral developments to integrate green infrastructure, which could include improvements to access routes. Overall, this policy is likely to have a minor positive effect on the SA objective.
SA9: Health and amenity Improve the health and well-being of the population and reduce inequalities in health.	+	Mitigating flooding risk has indirect implications for health and well-being. Part (a) of the policy, which seeks to integrate green infrastructure, should provide benefits to human health and well-being. Overall, this policy is likely to have a minor positive effect on the SA objective.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	0	No impacts on this SA objective have been identified.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	0	No impacts on this SA objective have been identified.
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	No impacts on this SA objective have been identified.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	In seeking to reduce flood risk, the policy could help to ensure that local environments remain clean, safe and pleasant. A minor positive effect is therefore expected in relation to this SA objective.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new</p>	0	No impacts on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.		
<p>SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 29: Transport

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	<p>Part (d) of the policy, in requiring development to demonstrate that "transport would not have an unacceptable adverse impact on the environment or amenity along a transport route", will help to ensure that landscape is safeguarded and visual impact minimised. Part (e) also requires "where new or modified routes are required, optimise opportunities to create and integrate green infrastructure". The policy does not, however, consider opportunities to strengthen landscape character.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+	<p>Part (d) of the policy, in requiring development to demonstrate that "transport would not have an unacceptable adverse impact on the environment or quality of life", will help to ensure that biodiversity and geodiversity are conserved. Part (e) also requires "where new or modified routes are required, optimise opportunities to create and integrate green infrastructure". The policy does not, however, consider opportunities to enhance the environment. Roads and other transport routes can often provide areas for wildlife (as seen in roadside verge nature reserves).</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	<p>Part (d) of the policy, in requiring development to demonstrate that "transport would not have an unacceptable adverse impact on the environment or amenity along a transport route", will help to ensure that cultural heritage, architecture and archaeology are preserved. Part (e) of the policy also requires new developments to "optimise opportunities to create and integrate green infrastructure". The historic environment can be a component of green infrastructure and should therefore have a positive effect on the SA objective.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings,</p>	+	<p>Part (c) of the policy, in requiring development to demonstrate that "transport would not have an unacceptable adverse impact on the environment", will help to ensure that best and most versatile agriculture land and open space/green infrastructure are safeguarded. Part (e) of the policy also requires new developments to "optimise opportunities to create and integrate green infrastructure". This policy is therefore likely to have a minor positive effect on the SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
whilst safeguarding open space/green infrastructure.		
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+	<p>Part (d) of the policy, in requiring development to demonstrate that “transport would not have an unacceptable adverse impact on the environment”, will help to ensure that water and air quality is protected.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+	<p>For haulage, the policy's requirement to "prioritise the use of alternatives to road transport, including by means of water, rail, conveyors and pipelines" should help to achieve reductions in emissions and thereby contribute to this SA objective. However, the fact that transport is 'road-based' does not automatically mean that it necessarily is - or will be, either now or later in the plan period – the most polluting or otherwise negative option. This will depend on the vehicles in question; a zero or ultra-low emission road vehicle may offer climate change benefits over water or rail transport (just as equivalent technologies may, in turn, make water and rail less polluting). It is clear that the vast majority of emissions will occur through the movement of minerals, and not people. In the short term at least, these vehicles are likely to be diesel-powered, with consequent carbon emissions, and the policy does include the need for alternatives to be "practicable or environmentally preferable" to road transport, meaning that any option should be beneficial to (or, at least, least damaging to) climate change. This is further strengthened by the provision in part (d) for development to demonstrate that "transport would not have an unacceptable adverse impact on the environment or amenity along a transport route".</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+	<p>Roads and their immediate surroundings can play a role in flood risk management. They can exacerbate flood risk by acting as conduits for run-off, and can help manage flood risk through their surroundings acting as flood retention areas. Part (e) of the policy seeks to mitigate flood risk by optimising “opportunities to create and integrate green infrastructure.”</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+	<p>Part (b) of the policy, in requiring development to demonstrate that it “provides safe and convenient access for employees and visitors which optimises the use of public transport, walking and cycling”, seeks to ensure that access routes are created and are of a high-quality.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+	<p>Heavy goods vehicles can increase health and safety risks through the emission of pollutants and the potential for physical collisions. Large vehicles on narrow roads have the potential to be dangerous. In promoting alternatives to road-based transport, the policy will help to reduce these health risks, and part (b) specifically requires safety to be considered. These provisions may reduce the scale/likelihood of any net additional health risks, but may be less likely to improve health from the baseline level.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	0	<p>No impacts on this SA objective have been identified.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+	<p>In terms of reducing the need to travel, this will be limited by the location of a given site relative to its onward markets. Minerals can only be worked where they occur and, due to the cost of transporting bulky products, mineral workings are generally within a reasonable distance of their markets. The issue of site location is considered through the spatial strategy of the MLP, and the assessment of the Areas of Search.</p> <p>In terms of moving towards sustainable travel patterns, the policy, in seeking alternatives to road transport, will help to achieve this part of the SA objective as far as mineral movements are concerned. Water, rail, conveyors, and pipelines all tend to require less energy and to emit lower levels of carbon emissions than road transport (although this will be dictated by the specific circumstances of each case).</p> <p>Part (b) considers the sustainable travel of both employees and visitors, as it states that any</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>development will: "provide safe and convenient access for employees and visitors which optimises the use of public transport, walking and cycling". This should promote the use of sustainable modes of transport over private car use.</p> <p>Overall, this policy is likely to have a minor positive effect on the SA objective.</p>
<p>SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	0	No impacts on this SA objective have been identified.
<p>SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+	<p>The presence of heavy goods vehicles carrying minerals to and from a site can affect the degree to which the local environment remains clean, safe and pleasant. Part (c) requires development proposals to "connect to the strategic transport network without having an unacceptable adverse effect on transport safety or congestion" and part (d) requires them "not to have an unacceptable adverse effect on the environment or amenity along transport routes".</p> <p>Overall, this policy is likely to have a minor positive impact on the SA objective.</p>
<p>SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No impacts on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No impacts on this SA objective have been identified. The policy could potentially offer greater support to new technologies in helping to achieve improvements in transport safety, noise, and emissions and could consider recognising and supporting new technologies, such as electric vehicles. However, overall this policy is likely to have a negligible effect on the SA objective.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.</p>	0	No impacts on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.</p>	0	No impacts on this SA objective have been identified.

Policy MLP 30: Planning Obligations

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+	The policy sets out that planning obligations may be secured to help enable measures to make proposed developments acceptable. The reasoned justification text for the policy highlights that this may incorporate measures which would help to preserve important features in the built, historic and natural environment. The policy may therefore be used to secure mitigation through planning obligations which would help to reduce any adverse impact on the landscape and therefore a minor positive effect is expected in relation to this SA objective.
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+	The policy sets out that planning obligations may be secured to help enable measures to make proposed developments acceptable. The reasoned justification text for the policy highlights that this may incorporate measures which would help to preserve important features in the built, historic and natural environment. The policy may therefore be used to secure mitigation through planning obligations which would help to reduce any adverse impact on biodiversity and geodiversity and therefore a minor positive effect is expected in relation to this SA objective.
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	+	The policy sets out that planning obligations may be secured to help enable measures to make proposed developments acceptable. The reasoned justification text for the policy highlights that this may incorporate measures which would help to preserve important features in the built, historic and natural environment. The policy may therefore be used to secure mitigation through planning obligations which would help to reduce any adverse impact on the historic environment and therefore a minor positive effect is expected in relation to this SA objective.
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+	<p>The policy sets out that planning obligations may be secured to help enable measures to make proposed developments acceptable. The reasoned justification text for the policy highlights that this may incorporate measures which would help to preserve important features in the built, historic and natural environment. The policy may therefore be used to secure mitigation through planning obligations which would help to reduce any adverse impact particularly in terms of water quality and therefore a minor positive effect is expected in relation to this SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	0	<p>No effects on this SA objective have been identified.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	0	<p>No effects on this SA objective have been identified.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	0	<p>No effects on this SA objective have been identified.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	+	<p>The policy sets out that planning obligations may be secured to help enable measures to make proposed developments acceptable. The reasoned justification text for the policy highlights that this may incorporate measures which would help to preserve important features in the built, historic and natural environment. The policy may therefore be used to secure mitigation through planning obligations which would help to protect public health and improve amenity and therefore a minor</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		positive effect is expected in relation to this SA objective.
SA10: Waste Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	0	No effects on this SA objective have been identified.
SA11: Traffic and transport Reduce the need to travel and move towards more sustainable travel patterns.	0	No effects on this SA objective have been identified.
SA12: Growth with prosperity for all Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	0	No effects on this SA objective have been identified.
SA13: Provision of housing Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.	+	The policy sets out that planning obligations may be secured to help enable measures to make proposed developments acceptable. The reasoned justification text for the policy highlights that this may incorporate measures which would help to preserve important features in the built, historic and natural environment. The policy may therefore be used to secure mitigation through planning obligations which would help to protect elements of local environment (such as historic assets and important landscape features) which may help to make it a pleasant place to reside and therefore a minor positive effect is expected in relation to this SA objective.
SA14: Participation by all Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.	0	No effects on this SA objective have been identified.

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	0	No effects on this SA objective have been identified.
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No effects on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No effects on this SA objective have been identified.

Safeguarding Policies

Policy MLP 31: Safeguarding Locally and Nationally Important Mineral Resources

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	<p>+?/-?</p>	<p>Mineral Safeguarding Areas and Mineral Consultation Areas supported by this policy may have minor positive effects on landscape, as the potential restriction of non-mineral development in these areas that would prejudice mineral workings, may prevent development that could negatively impact on the landscape.</p> <p>However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) that could have a negative impact on the landscape.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will automatically be allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which for some will not be known until the planning application stage.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	<p>+?/-?</p>	<p>Mineral Safeguarding Areas and Mineral Consultation Areas supported by this policy may have minor positive effects on biodiversity, as the potential restriction of non-mineral development in these areas that would prejudice mineral workings may prevent development that could harm biodiversity and geodiversity. Also, should areas within Safeguarding Areas be used for mineral extraction in the future, long-term biodiversity benefits could occur as a result of the restoration of mineral sites. Minerals working could also reveal previously unknown geodiversity features.</p> <p>However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) that could lead to adverse effects on habitats and species.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>will automatically be allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which for some will not be known until the planning application stage.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA3: Cultural heritage, architecture and archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>	<p>+?/-?</p>	<p>Mineral Safeguarding Areas and Mineral Consultation Areas supported by this policy may potentially restrict non-mineral developments that would otherwise have a negative effect on the historic environment, heritage assets and their setting.</p> <p>However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) that would have a negative impact on the historic environment so a minor negative effect is identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which will not be known until the planning application stage.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	<p>++?/-?</p>	<p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The purpose of the policy is to safeguard minerals reserves and, as such it strongly supports that element of this SA objective. Furthermore, through safeguarding mineral sites and their supporting infrastructure, the policy may potentially restrict non-mineral developments that could otherwise have a negative effect on the best and most versatile agricultural lands, land of Green Belt value, reuse of vacant buildings and safeguarding open space/green infrastructure. As such, a significant positive is identified on this SA objective as</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>this policy directly reflects the purposes of this SA objective.</p> <p>However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) that would have a negative impact on the material assets, so a minor negative effect is identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which will not be known until the planning application stage.</p> <p>Overall, an uncertain mixed significant positive and minor negative effect is likely for this SA objective.</p>
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	<p>+?/-?</p>	<p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy may therefore have minor positive effects on water quality and air quality as the potential prevention of non-mineral development within safeguarding areas and mineral consultation areas could reduce the risk of water contamination and air pollution either through the restriction of more polluting, alternative activities in the area or cumulative impacts associated with intensified development.</p> <p>However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) that could lead to a rise in poor air and/ or water quality. A minor negative effect is therefore identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which will not be known until the planning application stage.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	<p>+?/-?</p>	<p>objective.</p> <p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy may have minor positive effects on climate change as the potential prevention of non-mineral though safeguarding locally and nationally important mineral resources could reduce climate change impacts either through the restriction of more fossil-fuel intensive activities or cumulative impacts associated with intensified development. It could also minimise loss of soil carbon through extraction.</p> <p>However, the Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place) which may have their own climate change impacts. A minor negative effect is therefore identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which will not be known until the planning application stage.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	<p>+/?</p>	<p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy therefore may have minor positive effects on flooding as the potential prevention of non-mineral development though safeguarding mineral sites and their supporting infrastructure could reduce the risk of flooding either through the restriction of development that could be more susceptible to flooding or intensified development.</p> <p>However, Safeguarding Areas may lead to more mineral extraction activities (e.g. where the mineral needs to be worked before non-mineral development can take place). However, extraction of sand and gravel-based resources is considered compatible development in flood zone 3 and may lead to increased flood storage in the long term, therefore uncertain effects are</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>also identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which will not be known until the planning application stage.</p> <p>Overall, a mixed minor positive and uncertain effect is likely for this SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	<p>+?/-?</p>	<p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy may therefore potentially restrict non-mineral developments that could otherwise have a negative effect on equitable access to local services and facilities within Worcestershire. A minor positive effect is therefore identified.</p> <p>However, where potential new mineral developments come forward within safeguarded areas, these mineral developments may also lead to negative effects on access to local services and facilities within the county. Furthermore, through safeguarding locally and nationally important minerals resources, this policy may also prevent non-mineral development coming forward that could lead to improved access to or provision of services. A minor negative effect is therefore identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of proposals within Safeguarding Areas and Mineral Consultation Areas, which will not be known until the planning application stage.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the</p>	<p>+?/-?</p>	<p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>population and reduce inequalities in health.</p>		<p>development. The policy could therefore restrict non-mineral developments that could otherwise have a negative effect on the health and wellbeing of people and/or conflict with the existing minerals operations.</p> <p>However, where potential new mineral developments come forward within safeguarded areas, these mineral developments may have adverse effects on the health and wellbeing of people. Furthermore, through safeguarding locally and nationally important minerals resources, this policy may also prevent non-mineral development coming forward that could lead to improved health and well-being facilities, such as doctors' surgeries and recreational facilities.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	<p>-?</p>	<p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. Although mineral sites and their associated infrastructure are unlikely to have adverse effects on waste management infrastructure, the policy promotes the use of primary mineral extraction and so a minor negative effect with uncertainty is identified.</p>
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	<p>+?/-?</p>	<p>This policy seeks to safeguard locally and nationally important mineral resources so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy therefore may potentially restrict non-mineral developments that could otherwise have a negative effect the need to travel and travel patterns so a minor positive effect is identified.</p> <p>In addition, if a development cannot come forward due to its being located in a safeguarding area, it may come forward in a different area that is less accessible and leads to greater reliance on use of the private car, leading to minor negative effects.</p> <p>However, where potential new mineral developments come forward within safeguarded areas,</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>these mineral developments may lead to adverse traffic impacts, so a minor negative effect is identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+/-	<p>The policy supports the extraction of minerals of economic value, thereby supporting the minerals sector and its direct and indirect beneficial economic effects. Minerals are essential to delivering economic growth and infrastructure, and by safeguarding mineral resources, this policy can help to ensure that minerals are available when needed to respond to economic drivers. A minor positive effect is therefore identified.</p> <p>It could also, however, through the requirement of a technical assessment, hamper non-minerals development that could support Worcestershire's economy and infrastructure. Even where development does go ahead, following or alongside extraction of the economically valuable minerals resource, the additional burden of having to comply with the policy could add time and money to proposals and thereby negatively affect their economic potential.</p> <p>Overall, a mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+/-?	<p>The policy supports the extraction of minerals of economic value, thereby supporting the minerals sector in delivering the materials necessary for – among other uses – housebuilding. By safeguarding mineral resources, this policy can help to ensure that minerals are available when needed to respond to the need for housing growth and so a minor positive effect is identified.</p> <p>It could also, however, through the requirement of a technical assessment, hamper housebuilding and add costs to housing land and development, and increase the time needed to deliver houses ready to market, so a minor negative impact is identified.</p> <p>Any effects would be uncertain as the potential for effects will depend on the type of mineral</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		resource that may be worked, as not all minerals worked supply house builds. Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	+/-	<p>The delivery of technology, innovation and inward investment relies, in part, on the availability of minerals at the right time and in the right location to deliver the physical component of its development. This policy can therefore support this objective by helping to ensure this availability and so minor positive effect is identified.</p> <p>It could also, however, hamper non-minerals development that could support Worcestershire's economy by supporting the development of new technologies. Even where development does go ahead, following or alongside extraction of the economically valuable minerals resource, the additional burden of having to comply with the policy could add time and money to proposals and thereby negatively affect their economic potential.</p> <p>Overall, a mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA16: Population (skills and education)</p> <p>Raise the skills levels of qualifications of the workforce.</p>	0	No effects on this SA objective have been identified.
<p>SA17: Population (crime & fear of crime)</p> <p>Reduce crime, fear of crime and antisocial behaviour.</p>	0	No effects on this SA objective have been identified.

Policy MLP 32: Safeguarding Mineral Sites and Supporting Infrastructure

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA1: Landscape</p> <p>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>	+?/-?	<p>Safeguarding mineral sites and supporting infrastructure may have minor positive effects on landscape, as the potential prevention of incompatible development in these areas that would prejudice mineral workings may prevent development that could negatively impact on the landscape.</p> <p>However, through safeguarding mineral sites and their supporting infrastructure, the policy will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on landscape. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA2: Biodiversity and geodiversity</p> <p>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>	+?/-?	<p>Safeguarding mineral sites and supporting infrastructure may have minor positive effects on biodiversity, as the potential prevention of incompatible development that would prejudice mineral workings may prevent development that could harm biodiversity.</p> <p>However, through safeguarding mineral sites and their supporting infrastructure, the policy will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on biodiversity. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA3: Cultural heritage, architecture and</p>	+?/-?	<p>Safeguarding areas around minerals infrastructure will potentially restrict non-mineral</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>archaeology</p> <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>		<p>developments that could otherwise have a negative effect on the historic environment, heritage assets and their setting.</p> <p>However, through safeguarding mineral sites and their supporting infrastructure, the policy will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on the historic environment, heritage assets and their setting. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA4: Material assets</p> <p>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural lands, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings, whilst safeguarding open space/green infrastructure.</p>	<p>++?/-?</p>	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. Through safeguarding mineral resources, the policy may potentially restrict non-mineral developments that could otherwise have a negative effect on the best and most versatile agricultural land, Green Belt land, reuse of vacant buildings and safeguarding open space/green infrastructure. As such, a significant positive effect is identified on this SA objective as this policy directly reflects the purposes of this SA objective.</p> <p>However, where potential new mineral developments come forward within safeguarded areas, these mineral developments may lead to the loss of the best and most versatile agricultural land, Green Belt land and open space/green infrastructure.</p> <p>A minor negative effect is therefore identified.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		Overall, an uncertain mixed significant positive and minor negative effect is likely for this SA objective.
<p>SA5: Natural Resources</p> <p>Protect and enhance water and air quality.</p>	+?/-?	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy may therefore have minor positive effects on water quality and air quality as the potential prevention of non-mineral development within safeguarding areas could reduce the risk of water contamination and air pollution either through the restriction of a more polluting, alternative activity or cumulative impacts associated with intensified development. However, the continued operations of mineral safeguarding sites may have their own impacts on air and water pollution.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA6: Climate Change and energy</p> <p>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>	+?/-?	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy may have minor positive effects on climate change as the potential prevention of non-mineral though safeguarding mineral sites and their supporting infrastructure could reduce climate change impacts either through preventing more fossil-fuel intensive activities or cumulative impacts associated with intensified development. However, the continued operations of mineral safeguarding sites and their associated infrastructure may have their own climate change impacts.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure, so a minor negative effect is identified.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
<p>SA7: Flooding</p> <p>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>	+/-/?	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy therefore may have minor positive effects on flooding as the potential prevention of non-mineral development though safeguarding mineral sites and their supporting infrastructure could reduce the risk of flooding either through preventing a development that could be more susceptible to flooding or intensified development.</p> <p>However, the continued and future operations of mineral safeguarding sites and associated infrastructure may have their own impacts on flooding, so a minor negative effect is identified. Alternatively, extraction of sand-based resources is considered compatible development in flood zone 3 and may lead to increased flood storage in the long term, therefore uncertain effects are also identified.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, a mixed minor positive, minor negative and uncertain effect is likely for this SA objective.</p>
<p>SA8: Access to Services</p> <p>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>	+?/-?	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy may therefore potentially restrict non-mineral developments that could otherwise have a negative effect on equitable access to local services and facilities within Worcestershire. A minor positive effect is therefore identified.</p> <p>However, the safeguarding areas will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing impacts on access to local services and facilities within Worcestershire. Furthermore, through safeguarding mineral sites and supporting infrastructure, this policy may also prevent non-mineral development coming forward that could lead to improved access to or provision of services. A minor negative effect is therefore identified. It must be emphasised, however, that the process of safeguarding does not mean that extraction will be automatically allowed or that</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		<p>non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA9: Health and amenity</p> <p>Improve the health and well-being of the population and reduce inequalities in health.</p>	<p>+?/-?</p>	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy could therefore restrict non-mineral developments that could otherwise have a negative effect on the health and wellbeing of people and/or conflict with the existing minerals operations.</p> <p>However, through safeguarding mineral sites and their supporting infrastructure, the policy will ensure that existing and allocated minerals infrastructure continues to operate unaffected by incompatible developments, which may therefore prolong any existing impacts on the health and wellbeing of local people. Furthermore, through safeguarding mineral sites and supporting infrastructure, this policy may also prevent non-mineral development coming forward that could lead to improved health and well-being facilities, such as doctors' surgeries and recreational facilities.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA10: Waste</p> <p>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>	<p>-?</p>	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. Although mineral sites and their associated infrastructure are unlikely to have adverse effects on waste management infrastructure, the policy promotes the use of primary mineral extraction and so a minor negative</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		effect with uncertainty is identified.
<p>SA11: Traffic and transport</p> <p>Reduce the need to travel and move towards more sustainable travel patterns.</p>	+?/-?	<p>This policy seeks to safeguard permitted and allocated minerals sites and existing, planned and potential storage, handling and transport sites so they are not adversely impacted by sensitive or inappropriate development that would conflict with mineral development. The policy therefore may potentially restrict non-mineral developments that could otherwise have a negative effect the need to travel and travel patterns so a minor positive effect is identified.</p> <p>However, through safeguarding mineral sites and their supporting infrastructure, the policy will ensure that existing minerals infrastructure continue to operate un-affected by incompatible developments, which may therefore prolong existing adverse traffic impacts so a minor negative effect is identified. In addition, if a development cannot come forward due to its being located in a safeguarding area, it may come forward in a different area that is less accessible and leads to greater reliance on use of the private car, leading to minor negative effects.</p> <p>It must be emphasised, however, that the process of safeguarding does not mean that that non-mineral development cannot take place.</p> <p>Any effects would be uncertain as the potential for effects will depend on the exact nature and design of mineral sites and their supporting infrastructure.</p> <p>Overall, an uncertain mixed minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA12: Growth with prosperity for all</p> <p>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>	+/-	<p>The policy supports the extraction of minerals of economic value, thereby supporting the minerals sector and its direct and indirect beneficial economic effects. Minerals are essential to delivering economic growth and infrastructure, and by safeguarding mineral resources, this policy can help to ensure that minerals are available when needed to respond to economic drivers. A minor positive effect is therefore identified.</p> <p>It could also, however, through the requirement of a technical assessment, hamper non-minerals development that could support Worcestershire's economy and infrastructure. Even where development does goes ahead, following or alongside extraction of the economically valuable minerals resource, the additional burden of having to comply with the policy could add time and money to proposals and thereby negatively affect their economic potential.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		Overall, a mixed minor positive and minor negative effect is likely for this SA objective.
<p>SA13: Provision of housing</p> <p>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>	+?/-?	<p>The policy supports the extraction of minerals of economic value, thereby supporting the minerals sector in delivering the materials necessary for – among other uses – housebuilding. By safeguarding mineral resources, this policy can help to ensure that minerals are available when needed to respond to the need for housing growth and so a minor positive effect is identified.</p> <p>It could also, however, through the requirement of a technical assessment, hamper housebuilding and add costs to housing land and development, and increase the time needed to deliver houses ready to market, so a minor negative impact is identified.</p> <p>Any effects would be uncertain as the potential for effects will depend on the type of mineral resource that may be worked, as not all minerals worked supply house builds.</p> <p>Overall, a mixed uncertain minor positive and minor negative effect is likely for this SA objective.</p>
<p>SA14: Participation by all</p> <p>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>	0	No effects on this SA objective have been identified.
<p>SA15: Technology, innovation and inward investment</p> <p>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>	+/-	<p>The delivery of technology, innovation and inward investment relies, in part, on the availability of minerals at the right time and in the right location to deliver the physical component of its development. This policy can therefore support this objective by helping to ensure this availability and so minor positive effect is identified.</p> <p>It could also, however, hamper non-minerals development that could support Worcestershire's economy by supporting the development of new technologies. Even where development does go ahead, following or alongside extraction of the economically valuable minerals resource, the additional burden of having to comply with the policy could add time and money to proposals and thereby negatively affect their economic potential.</p>

Sustainability Appraisal Objectives	SA Score	Potential effects
		Overall, a mixed minor positive and minor negative effect is likely for this SA objective.
SA16: Population (skills and education) Raise the skills levels of qualifications of the workforce.	0	No effects on this SA objective have been identified.
SA17: Population (crime & fear of crime) Reduce crime, fear of crime and antisocial behaviour.	0	No effects on this SA objective have been identified.

Appendix 6

Evolution of the Minerals Local Plan and reasonable alternatives

Worcestershire Minerals Local Plan

Evolution of the Minerals Local Plan and reasonable alternatives up to Fourth Stage Consultation

November 2018

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Document Location: www.worcestershire.gov.uk/minerals
Contact: Minerals and Waste Planning Policy,
Economy and Infrastructure Directorate,
Worcestershire County Council,
County Hall,
Spetchley Road,
Worcester, WR5 2NP
Email: minerals@worcestershire.gov.uk
Tel: 01905 766734

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1. Introduction

- 1.1. This document seeks to 'tell the story' of how the current Minerals Local Plan (MLP) has been developed. It records the alternatives that have been considered through the development of the MLP and the Sustainability Appraisal (SA), and reasons why they were rejected or taken forward. It highlights the iterative nature of plan development: where options were discounted in early stages, this has not precluded them from being reconsidered at later stages if consultation responses, SA recommendations or new evidence suggest the approach should be reconsidered.

How reasonable alternatives have been considered in the MLP and in the SA

- 1.2. The SEA Directive requires the Environmental Report undertaken alongside the plan (in this case the SA) to provide "An outline of the reasons for selecting the alternatives dealt with".
- 1.3. During the Third Stage Consultation on the emerging Minerals Local Plan it became apparent that although the consultation document included a "Developing the Third Stage Consultation" section at the end of every chapter (apart from *Chapter 1: Introduction* and *Chapter 9: Implementation and monitoring framework*) that provide a useful summary of how the MLP has developed, to get a full understanding of the alternatives considered consultees would also need to refer to previous consultation and background documents.
- 1.4. The SA Environmental Report provided a helpful commentary on the alternatives, however the Council has developed this document to improve transparency and provide a full narrative on the development of the emerging Minerals Local Plan. It is structured to consider the development of each broad section of the plan in turn:
 - Section 2: Overview of the stages of development of the Minerals Local Plan
 - Section 3: Evolution of the Portrait of Worcestershire

2. Section 4:

- Evolution of the Vision and Objectives
- Section 5: Evolution of the Spatial Strategy
- Section 6: Evolution of the Steady and Adequate Supply of Mineral Resources
- Section 7: Evolution of the Development Management policies
- Section 8: Evolution of Safeguarding Mineral Resources and Supporting Infrastructure policies

3. Overview of the stages of development of the Minerals Local Plan

Background: The County of Hereford and Worcester Minerals Local Plan 1997

- 2.1. The County of Hereford and Worcester Minerals Local Plan was adopted in 1997 and was intended to be in place until in 2003. However, some of its policies were "saved" as part of the Development Plan by the Secretary of State under the provisions of the Planning and Compulsory Purchase Act 2004 and remain extant until they are superseded by the adoption of a new Minerals Local Plan for Worcestershire.
- 2.2. The County of Hereford and Worcester Minerals Local Plan 1997 was prepared when Herefordshire and Worcestershire were combined as a single county authority and set out policies for the extraction and restoration of minerals sites across this geography with a focus on the extraction of aggregates. It was intended to be read alongside a Structure Plan which set out overarching strategic planning policies for the area.
- 2.3. As set out in the report to cabinet of 27th September 2012 (item 8) for the approval of the revised Mineral and Waste Local Development Scheme:

"Strategic minerals policy is currently set out in the West Midlands Regional Spatial Strategy (RSS). The Council's current planning policies for mineral development are set out in the saved policies of the Structure Plan for Worcestershire (2001) and the Hereford and Worcester Minerals Local Plan (1997).

The West Midlands RSS was formulated in 1998, based on earlier data, and sets requirements which run out in 2016. The Government has stated its intention that the RSS will be revoked in the near future.

The Structure Plan was adopted in 2001 and was intended to apply until 2011. The data on which it was based is now out of date and the Structure Plan is likely to be abolished with the RSS.

The Minerals Local Plan was intended to expire in 2003. It reflects earlier values and plans and does not address the non-aggregate minerals found in Worcestershire (silica

sand, building stone, brick clay, coal, oil, gas and brine). Few of the policies were 'saved' and those that were need updating to take into account the approach in the NPPF and to reflect modern conditions and expectations. For example, the current Minerals Local Plan does not consider how the impacts of modern working practices should be mitigated or set any priorities for how mineral workings should be restored.

The current Minerals Local Plan identifies preferred areas for mineral extraction. All but one of these areas has now been worked or has permission to be worked. This means that there is now little strategic direction to control mineral development in the county.

The saved policies to assess new proposals are simplistic, dated and need review."

- 2.4. Only 5 of the policies in the adopted Minerals Local Plan were "saved" as part of the Development Plan by the Secretary of State under the provisions of the Planning and Compulsory Purchase Act 2004. The legal and policy framework for how Planning Policy must be prepared and what it should contain had also changed significantly since the plan was adopted, and the government had announced its intention to revoke all Regional Spatial Strategies and Structure Plan policies.
- 2.5. Together, these factors were considered to mean that it would not be reasonable or practicable to refresh the existing plan, and therefore the 2012 Local Development Scheme set out a timetable for the preparation of a new plan, rather than to review and amend the existing plan.

A New Worcestershire Minerals Local Plan: Stages of preparation

- 2.6. Throughout the evolution of the Minerals Local Plan, the approaches to the vision, objectives, and location and criteria-based policies have been refined according to the changing evidence base, consultation responses, and SA recommendations.

First Stage Consultation (Autumn/Winter 2012/13)

- 2.7. Production of the Minerals Local Plan began with a 'First Stage Consultation'. This early consultation was primarily an awareness raising and evidence gathering exercise but also gave estimates of the amount of minerals that were thought be required and gave a broad overview of the approach to directing the location of development, which at that time was based on areas of search and criteria polices and did not include specific sites. Comments were also requested on a series of background documents which had been prepared to provide evidence on what sort of minerals might be needed in Worcestershire, in what quantities and how they might be worked. This consultation was accompanied by the first stage of Sustainability Appraisal (SA), which was the Scoping Report. The SA Scoping Report was intended to establish the 'sustainability framework' against which the draft MLP

would be assessed and, as such, it did not make any recommendations to be addressed in the Second Stage Consultation

Second Stage Consultation (Autumn 2013 – Spring 2014)

2.8. The 'Second Stage Consultation' built on responses received on the first consultation to provide a clearer direction for minerals working and restoration in Worcestershire. It set out the likely scale of mineral development that the plan would need to provide for, and alternatives for the ways in which targets could be met. It also set out more details on the key issues through a 'Portrait of Worcestershire', and included elements common to most planning policy documents: a draft vision and objectives, and a range of options for addressing specific issues through policies which would be developed for the next stage of consultation. It also proposed "areas of search" for aggregates and an "opportunity area" for clay, as well as ideas for how policies could direct the restoration of mineral workings in these areas to contribute to strategic priorities. Options for how minerals could be safeguarded were also included. This consultation was accompanied by an 'Initial Sustainability Appraisal', which sought to appraise the emerging options in order to inform the next stage of MLP preparation.

1st and 2nd Call for Sites (Summer 2014 and Summer 2015)

2.9. In the summers of 2014 and 2015, Worcestershire County Council undertook two further consultations. These¹ were 'calls for sites' designed to allow landowners and minerals operators to propose locations for the council to consider as site allocations for future mineral working. These consultations marked a shift in the Council's approach to considering the location of future mineral development, as a change in government policy and responses to the Second Stage consultation made it clear that specific site allocations should be explored in preference to areas of search alone. The call for sites consultations were not accompanied by any SA documents, as they did not themselves set out any proposals, and were part of the technical evidence base to inform the Third Stage Consultation.

Third Stage Consultation and 3rd Call for Sites (Winter 2016/17)

2.10. The 'Third Stage Consultation' built on previous consultation responses and included "you said / we did" sections explaining how the approach in each chapter had been developed. The sites submitted in response to the calls for sites and subsequent evidence gathered during assessment of the sites was reflected in the Third Stage consultation.

¹ The 2015 consultation also included a call for mineral resources or supporting infrastructure which should be safeguarded, and asked for comments on the suite of background evidence documents.

- 2.11. The consultation document was more detailed than at earlier stages, setting out a full draft of proposed policy wording and site allocations to enable comment on the principles of the plan and the specific issues it sought to address. The consultation document included policies to: protect and enhance health, well-being and the natural and historic environment; safeguard important mineral resources and mineral infrastructure for the future; and identified 'strategic corridors' (with the status of areas of search) to direct where and how mineral development should take place to deliver co-ordinated multifunctional green infrastructure benefits, as well as identifying proposed 'specific site' and 'preferred area' site allocations.
- 2.12. The Third Stage Consultation also included a further (3rd) call for sites.
- 2.13. The Third Stage Consultation was accompanied by a full SA Environmental Report which sought to appraise the emerging options in order to inform the next stage of MLP preparation.

4th Call for Sites (Autumn/Winter 2017/18)

- 2.14. A significant concern was apparent in responses to the Third Stage Consultation in relation to Worcestershire's ability to supply adequate mineral resources, particularly sand and gravel, due to the small number proposed site allocations and low level of industry interest. There was also some concern about the robustness of the site selection process.
- 2.15. In response to this a further call for sites was undertaken, working with Worcestershire County Council's Content and Communications team to specifically target the minerals industry and landowners. The call for sites was open for a period of 18 weeks to provide as much opportunity as possible for landowners and operators to gather the necessary information.
- 2.16. The call for sites consultation was not accompanied by any SA documents, as it did not set out any proposals, and was part of the technical evidence base to inform the Fourth Stage Consultation.

Fourth Stage Consultation (Winter 2018/19)

- 2.17. The 'Fourth Stage Consultation' is a further full draft of proposed policy wording. In general, the direction of the plan remains broadly similar to the Third Stage Consultation, but with amendments to address issues raised in responses to the Third Stage Consultation and in the SA Environmental Report, as well as reflecting changes to national policy in the revised National Planning Policy Framework which was published in July 2018. As required by national policy, it differentiates between strategic policies and non-strategic policies.

- 2.18. In response to the Third Stage Consultation, concerns were raised about the ability for the plan to supply adequate sand and gravel resources and the reliance on windfall. This was due to the small number of specific sites and preferred areas proposed in the consultation document, the robustness of the site selection process and the large scale of strategic corridors (which had the status of areas of search) lacking certainty about where development would take place. As such, one of the key changes to the plan between the Third and Fourth Stage consultations is the removal of specific sites and preferred areas, which will now be allocated through a separate Mineral Site Allocations Development Plan Document, following more assessment work to be undertaken (which will include Sustainability Appraisal). This approach has been pursued to maximise the ability for preparation of the main Minerals Local Plan to stay on course and for strategic policies to be put in place as quickly as possible. In addition, it will build in flexibility for the Site Allocations to be reviewed and revised if necessary without affecting the strategic policies set out in the Minerals Local Plan.
- 2.19. The strategic corridor boundaries and mineral safeguarding areas have been amended since the Third Stage to account for key constraints, for example to remove settlements and sites allocated in other parts of the Development Plan. In addition, the role of strategic corridors has been reviewed so that rather than having the status of areas of search in themselves, they now provide policy direction, with specific areas of search for different mineral types being identified within them (based on the location of mineral after applying viability, environmental and amenity screening criteria).²
- 2.20. The Fourth Stage Consultation is accompanied by a further stage of Sustainability Appraisal.

² Worcestershire County Council (August 2018) *Worcestershire Minerals Local Plan Background Document: Location of development: screening and site selection methodology*

4. Evolution of the Portrait of Worcestershire

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
<p>The First Stage Consultation did not include a Portrait of Worcestershire, but it did set out information about the mineral resources in Worcestershire under the headings "What are minerals and why do we need them?", and "What minerals we have in Worcestershire" and asked consultees to respond with information which would help to identify the issues the MLP needed to address.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>A short Portrait of Worcestershire was set out that summarised key facts and figures about the county and provided some very high-level information about minerals in Worcestershire and minerals extraction.</p> <p>Consultation responses to the Second Stage Consultation broadly supported the issues considered and suggested additional evidence which could inform the portrait, but also suggested that there was a need for a sharper focus on the things that make Worcestershire unique.</p> <p>SA recommendations:</p> <p>The Initial Sustainability Appraisal considered the Portrait of Worcestershire, stating that the section provided a useful overview of Worcestershire and particularly welcomed the focus on green infrastructure, but it also stated that the section would benefit from drawing out some of the particular strengths and weaknesses of Worcestershire's economy, society and environment, and went on to identify some specific issues that could be strengthened:</p> <ul style="list-style-type: none"> • the cultural and economic importance of horticulture; • demographic pressures (including ageing populations in parts of the county); • proximity to the proposed HS2 rail line; 	<p>The Portrait was expanded to include a brief context on Worcestershire, and detailed information on the minerals resources of the county, plus background on the county's economy, environment and health and well-being of Worcestershire's communities.</p> <p>Following the recommendations in the Initial Sustainability Appraisal, reference was included to horticulture, demographic pressures, and the low number of water courses satisfying Water Framework Directive targets. No specific reference was made to the proposed HS2 rail line, but a section was included on rail transport.</p> <p>SA recommendations:</p> <p>The SA Environmental Report stated that no sustainability issues were identified within the Portrait of Worcestershire, and that there are no reasonable alternatives to the Portrait of Worcestershire as such; it does not seek to set a framework for development and does not include any policies or guidance on how or where minerals should be developed and restored. However, it did highlight some issues which could usefully be included in future iterations (the demand for affordable housing, the role of Neighbourhood Plans and other community initiatives; and the successes of partnership working).</p>	<p>The Portrait has been updated and amended to ensure it focuses on the issues which the Minerals Local Plan can and should address, but continues to provide a brief context on Worcestershire, and detailed information on the minerals resources of the county, plus background on the county's economy, environment and health and well-being of Worcestershire's communities.</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
	<ul style="list-style-type: none"> • low number of water courses satisfying Water Framework Directive targets; • affordable housing pressures; • Neighbourhood Plans and other community initiatives being taken forward; • the successes of partnership working. 	<p>These recommendations had been suggested in the Initial Sustainability Appraisal. They had not been included in the Portrait of Worcestershire in the Third Stage Consultation because:</p> <ul style="list-style-type: none"> • The demand for affordable housing was not considered to be a significant issue for the Minerals Local Plan, although the development targets for both housing and employment land in the county were referred to, recognising that minerals, particularly aggregates and brick clay, will be required to support this growth and deliver the new homes, businesses and infrastructure required. • Neighbourhood Plans and other community initiatives were not referred to specifically in the Portrait of Worcestershire as the section is intended to provide strategic-level information. However, the need to consider Neighbourhood Plans as part of the Development Plan for the county was referred to throughout the Third Stage Consultation document. • Success of partnership working was not included as it was too early in the plan making process to include any definitive comments on this. 	

4. Evolution of the Vision and Objectives

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
Vision			
<p>The First Stage Consultation did not include a Vision, but it did set out broad issues which the MLP would seek to address, including how much mineral is needed, when it will be needed, how mineral sites should be worked and restored, and where minerals should be extracted, and asked consultees to respond with information which would help to identify the issues the MLP needed to address.</p> <p>SA recommendations:</p> <p>None</p>	<p>The Second Stage Consultation set out a vision for the Plan based on the amount of minerals required throughout the lifetime of the plan, safeguarding resources for future use, sustainable working of sites and for sustainable benefits to be achieved through restoration and to deliver integrated green infrastructure benefits. The vision was linked to the spatial strategy which identified the locations where working mineral resources could meet market demand and identified restoration priorities.</p> <p>Further alternatives:</p> <p>Another alternative to the draft vision set out in the Second Stage Consultation would have been not to take an integrated approach to the winning and working of minerals, linking the location of mineral resources to the achievement of green infrastructure priorities. In this scenario, sites would have been considered individually. This was dismissed because, as the minerals planning authority, we considered that by having an integrated vision for sites, and considering potential for social, economic and environmental benefits holistically, there will be more benefits for Worcestershire communities and environment and restoration can be planned and integrated across sites, rather than an ad hoc approach. This was considered to better reflect the National Planning Policy Framework's</p>	<p>The Third Stage Consultation provided a narrative to explain the links between Worcestershire's unique issues set out in the Portrait and the "lasting legacy" and "holistic approach" which the vision and objectives seek to achieve. As a holistic approach is central to the plan, the vision makes reference to "enhancing the natural, built and historic environment" and Worcestershire's multi-functional green infrastructure in the vision rather than listing biodiversity, geodiversity, landscape character, water quality, flood alleviation, soil resources, heritage assets and archaeology separately.</p> <p>The suggestions made in the Initial Sustainability Appraisal that the Vision should reflect the need to mitigate and adapt to climate change, reduce energy and water consumption and maximise sustainable transport were integrated into the vision in the Third Stage Consultation. Whilst the term "sustainable transport" was not used within the vision because opportunities to use sustainable modes of transport such as rail and water are limited given the location of the minerals resources in Worcestershire, the vision did address the issues which sustainable transport would seek to address, stating that minerals transport would be energy efficient and would mitigate and adapt to the impacts of climate change.</p> <p>SA recommendations:</p>	<p>The vision in the Fourth Stage Consultation is largely the same as in the Third Stage Consultation, but with some strengthening of the concepts around delivering a "lasting legacy". The reference to achieving a seven year landbank of permitted sand and gravel reserves by 2025 has been removed as this has already been achieved, and therefore the vision in the Fourth Stage Consultation is to provide a steady, adequate and sustainable supply of locally and nationally important minerals.</p> <p>The SA Environmental Report accompanying the Third Stage Consultation suggested that reference could be reinstated to local building stone. This has not been included, as the vision refers to all locally and nationally important minerals together, rather than differentiating between the different types of resources in the county.</p> <p>The SA Environmental Report accompanying the Third Stage Consultation also suggested that reference could be included to agricultural land, green belt, and water and air quality in the vision. The vision in the Fourth Stage Consultation explicitly refers to the water environment, and with this amendment it is considered that these issues are captured within the vision's statement that "The winning, working and lasting legacy of minerals development in Worcestershire will be</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
	<p>requirement for the plan to set out the strategic priorities for the area and to contain a clear strategy for enhancing the natural, built and historic environment.</p> <p>SA recommendations:</p> <p>The Initial Sustainability Appraisal noted that a potential alternative would be to not include a Vision in the MLP, but concluded that this would not comply with the NPPF, and raised the need for local specificity.</p> <p>The vision should refer not only to the environmental benefits of a green infrastructure approach to restoration, but also to the economic and social benefits which collectively deliver sustainable development.</p> <p>The vision should reflect the need to mitigate and adapt to climate change, reduce energy and water consumption and maximise sustainable transport.</p>	<p>The SA Environmental Report stated that the vision and objectives are valuable parts of the MLP, but do not set policy and, as such, do not require the consideration of reasonable alternatives. Notwithstanding this, different approaches to the vision and objectives can still perform differently in SA terms, and the previous SA made recommendations to improve their sustainability performance. All of these suggestions, apart from the call to reference sustainable transport, have been integrated into the vision in the Third Stage Consultation. The previous SA also recommended the inclusion of geodiversity in the vision, but this addition has not been made.</p> <p>The SA Environmental Report suggested that consideration could be given to reinstating reference to local building stone, and including reference to agricultural land, green belt, and water and air quality in the Vision.</p>	<p>part of a holistic approach to delivering sustainable economic growth, supporting health and quality of life, and enhancing the built, historic, natural and water environment, that together contribute to the diverse character of the county and surrounding area."</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
Objectives			
None included	The Second Stage Consultation introduced objectives. These were based on the key issues that emerged from an evidence base review and consultation responses on the First Stage Consultation. Eight draft objectives were proposed which are considered below.	The Third Stage Consultation refined the objectives to reflect the recommendations of the SA and consultation responses on the Second Stage Consultation. The numbering below reflects the numbering of the objectives in the Third Stage Consultation, but have been grouped to follow the themes established at the Second Stage. SA recommendations: All of the SA recommendations on the draft objectives have been addressed in the Third Stage Consultation MLP.	Whilst the objectives in the Third Stage Consultation were broadly supported, the Fourth Stage Consultation refines or removes some of the objectives to ensure that they focus on what the plan should do in order to achieve the vision. The objectives have been considered alongside refining the Monitoring Framework to ensure that it will be possible to monitor whether the objectives are being achieved. The numbering below reflects the numbering of the objectives in the Fourth Stage Consultation, but have been grouped to follow the themes established at the Second Stage.
	SA recommendation (issue not addressed in draft objectives): Efficiency of resources in all its forms (including efficiency of transport, land, assets, energy, etc.) is an omission which could compromise delivery of the Vision and delivery of complementary plans and strategies.	See Objectives 2 and 9 below.	The Fourth Stage Consultation includes objective MO 6 : Ensure the prudent use of natural resources. In addition, objective MO 1 (see below) to enable the supply of minerals is intended to incorporate the contribution of substitute, secondary and recycled materials and minerals waste to overall mineral supply.
	SA recommendation (issue not addressed in draft objectives): Consideration should be given to the inclusion of new or amended objectives which refer to the appropriate location of mineral operations.	A new objective was included which linked the objectives with the spatial strategy and gave a broad indication of the locations for development 1. Deliver development in accordance with the priorities of the spatial strategy.	This objective has been removed from the Fourth Stage Consultation as it was considered that the spatial strategy is not an objective of the plan, rather a mechanism by which other objectives will be delivered.
	SA recommendation (issue not addressed in draft objectives):	SA recommendations: There is no specific mention of transport	The Fourth Stage Consultation does not include reference to transport in the objectives, as it was considered that this

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
	<p>There is no mention of transport in the draft MLP Objectives, although it could be considered a component of the climate change and environmental protection objectives. The impact of HGV movements associated with minerals operations can be considerable, and the MLP Objectives could include reference to the need to maximise the use of sustainable transport.</p>	<p>in any of the objectives, but Objectives 2, 3, 4, 5, 6, and 7 could all indirectly support reducing the need to travel and moving towards more sustainable travel patterns. Consideration could be given to specifically mentioning the need to reduce transport movements.</p>	<p>is not an objective of the plan. Instead transport is addressed through the plan's policies to ensure the impacts of transport are minimised whilst still enabling the necessary movement of materials and people using the most sustainable transport options.</p>
	<p>Draft objective 1 Ensure adequate and steady supply of aggregate, industrial and energy minerals over the life of the plan.</p> <p>Draft objective 2 Ensure the long term sustainability of supply of minerals resources.</p> <p>SA recommendations:</p> <p>More clarity over the minerals supply objectives (1 and 2) and how they related to each other. The Initial Sustainability Appraisal also suggested that building stone warranted inclusion within the objectives, given the important contribution it can make to maintaining local character.</p>	<p>The Third Stage Consultation refined the objectives 1 and 2 from the second stage consultation into the 6 objectives listed below to reflect the recommendations of the SA, and provides clarity with regard to the supply of each type of mineral, including building stone.</p> <ol style="list-style-type: none"> 2. Maximise the contribution of substitute, secondary and recycled materials and minerals waste to overall mineral supply. 3. Maintain the steady and adequate supply of sand and gravel and address shortfalls in the landbank of permitted reserves. 4. Maintain the county's role in the steady and adequate supply of brick clay, bricks and brick products. 5. Foster an adequate and diverse supply of building stone. 6. Enable the sustainable supply of other locally and nationally important mineral resources found in the county, including crushed rock and silica sand. 7. Safeguard locally and nationally important minerals and supporting infrastructure from being needlessly sterilised. <p>SA recommendations:</p>	<p>The Fourth Stage Consultation returns to fewer, broader objectives:</p> <p>MO 1: Enable the supply of minerals</p> <p>MO 6: Ensure the prudent use of natural resources</p> <p>The previous format of very specific objectives about mineral supply (2-6) risked those objectives not being flexible enough to adapt to changes in national policy or local circumstances. The policy framework in the Fourth Stage Consultation continues to address each of the mineral types, and the Monitoring Framework will ensure that the status of supply from the county for each mineral type will be monitored over the life of the plan.</p> <p>The specific objective about safeguarding resources and infrastructure has not been included in the Fourth Stage Consultation, as it was considered that this is not in itself an objective of the plan, rather safeguarding these is a mechanism by which other objectives (mineral supply, protecting and enhancing the local</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
		None included.	economy, and ensuring the prudent use of resources) will be delivered.
	<p>Draft objective 3 Protect and enhance Worcestershire's key economic sectors.</p> <p>SA recommendations: Concern that the economic objective focussed only on "key sectors", rather than the economy as a whole could risk compromising the ability of Worcestershire's wider economy to thrive.</p>	<p>The economic objective was refined to reflect the wider Worcestershire economy and removed the emphasis on key sectors.</p> <p>12. Ensure that mineral development protects and enhances the vitality of the local economy</p> <p>SA recommendations:</p> <p>None included.</p>	<p>The Fourth Stage Consultation retains this objective, with only a slight change to the style of wording.</p> <p>MO 5: Protect and enhance the vitality of the local economy</p>
	<p>Draft objective 4 Ensure mineral operations are resilient to and mitigate the impacts of climate change.</p> <p>Draft objective 5 Utilise mineral restoration to enhance the climate change resilience of the county</p> <p>SA recommendations:</p> <p>SA called for efficiency of all resources to be included to ensure delivery of the (then) MLP vision and to better accord with other plans and strategies, such as the Worcestershire Waste Core Strategy, Worcestershire Local Transport Plan 3, and Worcestershire Climate Change Strategy.</p> <p>Further alternatives:</p> <p>An alternative approach would be to rely on national policy rather than</p>	<p>Objective 4 and 5 were combined to include both mitigation and adaptation to climate change, along with the prudent use of natural resources.</p> <p>9. Ensure that mineral development contributes to the mitigation of and adaptation to climate change and makes prudent use of natural resources</p> <p>SA recommendations:</p> <p>None included.</p>	<p>Specific reference to climate change is not included in the objectives in the Fourth Stage Consultation, as it was considered that other objectives address climate change (see objectives MO 2, MO 3, MO 4, MO 5, MO 6). The policy framework includes specific reference to climate change.</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
	<p>highlighting these issues as an objective, however given the importance given to climate change and resource efficiency in the county and the potential for mineral workings to have significant impacts this was not considered to be a desirable alternative.</p>		
	<p>Draft objective 6 Protect and enhance the natural and historic environment.</p> <p>SA recommendations:</p> <p>Inclusion of enhancement as well as protection of the natural and historic environment was welcomed, as this stresses the need to seek net benefit rather than just mitigating harm. There may also be value in including a separate issue of 'locally-distinctive building stone' under this draft objective.</p>	<p>Objective 6 was refined to better reflect the inclusion of "local distinctiveness" in the vision.</p> <p>11. Ensure that mineral development protects and enhances the natural and historic environment and distinctive local character.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>This objective is refined in the Fourth Stage Consultation to better reflect the vision:</p> <p>MO 3: Protect and enhance the quality, character and distinctiveness of the built, historic, natural and water environment</p> <p>An additional objective has been included to make explicit reference to the economic and social as well as environmental function of Worcestershire's green infrastructure.</p> <p>MO 2: Protect and enhance the environmental and socio-economic function of Worcestershire's network of green spaces and natural elements (green infrastructure)</p>
	<p>Draft objective 7 Protect and enhance health and amenity.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>Objective 7 was developed further in response to the consultation comments received, and was broadened in its scope to include wellbeing and safety of the Worcestershire communities.</p> <p>10. Ensure that mineral development protects and enhances the health, well-being, safety and amenity of people and communities in and around Worcestershire</p> <p>SA recommendations:</p>	<p>The Fourth Stage Consultation retains this objective, with only a slight change to the style of wording.</p> <p>MO 4: Protect and enhance the health, well-being, safety and amenity of people and communities</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
		None included.	
	<p>Draft objective 8 - Involve all those affected as openly and effectively as possible.</p> <p>Further alternatives:</p> <p>Community engagement cannot be a policy requirement so one alternative would be to exclude this from the objectives of the plan. This would be contrary to current council practice and the values of the Council, the Community Strategy and the Statement of Community Involvement. It is not considered to be a desirable alternative.</p> <p>SA recommendations:</p> <p>Objectives to include a broad indication of the location of development, as the objectives set the overarching basis for the plan and should give greater certainty to the reader.</p>	<p>Objective 8 was refined in line with the desire to better align with the local distinctiveness and legacy aspects of the vision.</p> <p>8. Promote community inclusion in mineral development from inception to after-use so that local issues are understood and addressed</p> <p>A new objective was included which linked the objectives with the spatial strategy and gave a broad indication of the locations for development</p> <p>1. Deliver development in accordance with the priorities of the spatial strategy.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>Objective 8 from the Third Stage Consultation has been removed from the Fourth Stage Consultation as it was considered that this is not an objective which the plan itself can deliver, rather is a best practice approach to development management by which other objectives (protecting and enhancing health, well-being, safety and amenity, the quality, character and distinctiveness of the environment, the vitality of the local economy and the functionality of green infrastructure) will be delivered. Instead, the need for public consultation and the benefits of liaison committees are referenced throughout the plan, but as noted previously (see the Second Stage Consultation column), community engagement cannot be required by the policies in the plan.</p> <p>As noted above, Objective 1 from the Third Stage Consultation has been removed from the Fourth Stage Consultation as it was considered that the spatial strategy is not an objective of the plan, rather a mechanism by which other objectives will be delivered.</p>

5. Evolution of the Spatial Strategy

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<p>An initial decision was made to develop an entirely new Minerals Local Plan with a new spatial strategy.</p> <p>An alternative would have been to undertake a review and update of the existing MLP, rolling forward any site allocations. This was considered not to be a reasonable alternative, as the geographic basis for the existing (Herefordshire and Worcestershire) and new (Worcestershire) MLPs had changed, very little of the existing plan was "saved", there were very few remaining preferred areas, and there were no areas of search to be rolled forward.</p>	<p>N/A</p>	<p>N/A</p>	<p>N/A</p>
<p>Option 1: Direct development based on sites proposed by landowners and minerals industry</p>			
<p>An alternative considered was to develop the spatial strategy based on sites proposed by the minerals industry and landowners, subjecting these to a sieve test to consider each site in its immediate context.</p> <p>This was considered to be a reasonable alternative, but was not pursued because:</p> <ul style="list-style-type: none"> early discussions with the minerals industry and recent planning history indicated that it was likely that not enough sites would be put forward to rely on over the life of the plan and therefore areas of search and criteria based policies would also be required it was considered that, whilst a 	<p>Building on the direction established through the First Stage Consultation, the Second Stage Consultation stated that we did not intend to identify specific sites for the working of minerals.</p> <p>SA recommendations:</p> <p>Identifying more specific site allocations (rather than broad areas of search) would have the benefit of providing increased certainty for operators and communities over where development is likely to take place. This alternative, however, is not considered to be realistic; the MLP confirms that evidence on the precise location and extent of mineral deposits is uncertain, and it is therefore impossible to provide site-</p>	<p>In response to the Second Stage Consultation, there was a strong level of disagreement regarding the intention not to allocate specific sites, with concern expressed by local residents, the minerals industry and other Local Authorities that this might create unacceptable levels of uncertainty over where minerals development might take place.</p> <p>Responses to the Second Stage Consultation also included suggestions for specific sites and preferred areas from industry stakeholders, but an open call for sites had not been undertaken as part of the development of the emerging minerals plan.</p> <p>In addition, National Planning Practice Guidance for minerals published in 2014</p>	<p>Responses to the Third Stage Consultation highlighted that the small number of specific sites and preferred areas proposed in the Third Stage consultation document were not enough to deliver the level of minerals supply required from the County, as required by the national minerals policy and regional supply calculations, and expressed concern over the resulting reliance on windfall sites. Concerns were also raised about the robustness of the site selection process, in light of the preference it would create for development on allocated sites.</p> <p>In response to this, the County Council committed to undertake a 4th call for sites, and to reconsider the approach to site allocations.</p>

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<p>restrictive sieving process along the lines of that used in the existing MLP may provide protection for environmental assets, it could miss opportunities for betterment,</p> <ul style="list-style-type: none"> • a new plan could be in place more quickly if it did not contain specific sites and it was considered that, due to the age and limited number of saved policies of the existing MLP, speed should be a priority . <p>SA recommendations:</p> <p>None included.</p>	<p>specific levels of accuracy. The MLP's proposed approach is considered the most appropriate option, as it provides a degree of indication on the likely areas for minerals development, whilst allowing additional evidence to inform more specific locations as and when it becomes available through industry or academic research.</p>	<p>provided clarity that designating specific sites, preferred areas or areas of search should be approached in that order of priority, and set out high level tests that sites would need to meet to be allocated at each level.</p> <p>To address these issues, a call for sites was undertaken (summer 2014), requesting "information about preferred locations for aggregate extraction in Worcestershire". This 1st call for sites did not result in sufficient proposals to meet anticipated need for the life of the plan, and therefore a 2nd call for sites (for all mineral types) was undertaken in summer 2015. The Third Stage Consultation itself included a further (3rd) call for sites.</p> <p>These calls for sites requested estimates of the quantity of mineral resource (with borehole or survey information for the sites proposed if possible) as well as details of mineral operator interest and landowner support for the site to be worked. This places a burden on the site proposer at an early stage and may prevent some proposals coming forward due to commercial sensitivity of the data, but it was considered to be the most appropriate level of data for the identification of specific sites.</p> <p>A total of 30 sites were submitted in response to the Second Stage Consultation and the 1st and 2nd calls for sites (both for new locations and for extensions to existing workings), all of which were either for sand and gravel extraction or the mineral type was unclear.</p>	<p>The 4th call for sites was undertaken from September 2017 to January 2018, with support from Worcestershire County Council's Content and Communications team to specifically target the minerals industry and landowners. The call for sites was open for a period of 18 weeks to provide as much opportunity as possible for landowners and operators to gather the necessary information. An additional 5 sites have been submitted in response to the 4th call for sites, and further information provided in relation to 6 of the earlier site proposals.</p> <p>Due to the need identified above to reassess the method for site selection, it was not appropriate to simply assess these submissions against the criteria used in the Third Stage Consultation. Options for managing and addressing these requirements were considered alongside the need to have an up to date policy framework in place.</p> <ul style="list-style-type: none"> a. Consult on new site selection methodology ahead of Fourth Stage Consultation – this would have enabled consideration of all sites against the new methodology for potential inclusion as site allocations in the Fourth Stage Consultation. It would have provided a high level of certainty in relation to whether stakeholders considered the method to be appropriate and robust, but would have

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		<p>Sites were assessed through both site visits and through a targeted consultation of statutory consultees and other relevant bodies as to whether they considered that "minerals development on each of the sites is likely or unlikely to be acceptable in planning terms". Some consultees expressed concern that they were unable to make a definitive comment on acceptability planning terms because of limited information on how the site would be worked or restored, matters which would be addressed through the detail of a planning application. To address this and provide some certainty, whilst avoiding overly onerous information requirements from site proposers, a criteria-based system was developed for the Deliverability Assessment³ of submitted sites. Using the information provided with the site submission, this graded each site in relation to criteria designed to assess the national policy tests of whether viable resources are known to exist, whether landowners are supportive of minerals development, and whether the proposal is likely to be acceptable in planning terms:</p> <ul style="list-style-type: none"> • Green - site is highly likely to be deliverable • Amber - concerns over the deliverability of the site based on the information received • Red – likely to be serious constraints to delivering the site 	<p>significantly delayed the progression of the strategic policies in the plan.</p> <p>b. Consider sites for inclusion in Fourth Stage consultation against draft site selection methodology without prior consultation – this would have enabled consideration of all sites against the draft methodology for potential inclusion as site allocations in the Fourth Stage Consultation but with little certainty in relation to whether stakeholders would consider the method to be appropriate and robust. This could have resulted in further changes having to be made to the method and significantly higher risk of substantive objections to site allocations. This would have caused some definite delay to the progression of the strategic policies in the plan, as well as a high risk of additional delays.</p> <p>c. Progress strategic elements of the Minerals Local Plan and consult on new site selection methodology, but address site allocations in a separate Development Plan Document with its own preparation schedule – this would ensure that the strategic elements of</p>

³ Worcestershire County Council (November 2016) *Worcestershire Minerals Local Plan Background Document: Call for Sites – Deliverability Assessment*. Available at www.worcestershire.gov.uk/mineralsbackground.

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		<p>The overall category for each site was determined by the lowest score against any criterion. The Deliverability Assessment informed the Third Stage Consultation, those sites graded green proposed as specific sites, those graded amber proposed as preferred areas, and those graded red were not proposed for allocation.</p> <p>This resulted in three Specific Sites and two Preferred Areas proposed in the Third Stage Consultation, and a remaining shortfall for sand and gravel of approximately 10 million tonnes which would need to be delivered through windfall sites.</p> <p>Alternatives considered :</p> <p>Option 1: Where insufficient information on the quantity of mineral resource was provided, an alternative would have been to rely on the estimates set out in the <i>Analysis of Resources</i> which is based on BGS data. This information was not considered robust enough for the identification of specific sites.</p> <p>Option 2: Require detailed site investigations with robust resource estimates and detailed site working plans from the parties proposing the site to provide a high level of certainty. This was considered to be too onerous and not reasonable to require detailed proposals to be laid out before the policy requirements of the Minerals Local Plan are known.</p> <p>Option 3: At this stage the option of buffering environmental assets and sensitive receptors and undertaking a</p>	<p>the Minerals Local Plan could be progressed as quickly as possible to provide certainty over the vision, objectives, spatial strategy and development management policies. This would provide a high level of certainty in relation to whether stakeholders consider the method to be appropriate and robust, but would significantly delay the certainty provided to communities and developers by allocating Specific Sites and Preferred Areas.</p> <p>Option C was considered to maximise the ability for preparation of the main Minerals Local Plan to stay on course and for strategic policies to be put in place as quickly as possible. In addition, it will build in flexibility for the Site Allocations to be reviewed and revised if necessary without affecting the strategic policies set out in the Minerals Local Plan. It was therefore the option progressed in the revised Local Development Scheme which was approved by Cabinet in July 2018, which introducing a timetable for the preparation of a separate Mineral Site Allocations Development Plan document.</p> <p>This change in approach is consistent with the revised National Planning Policy Framework (July 2018) in relation to setting out strategic policies, and takes into account the new requirement that, from April 2018, under Regulation 10A</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
		<p>sieve test of sites was not considered appropriate to determine the acceptability of sites in planning terms, because the impact on the environment will vary according to the detail of any proposals and information on how the sites will be worked which will come forward as part of a planning application, with protection provided through policy criteria in the plan.</p> <p>SA recommendations:</p> <p>The SA Environmental Report appraised the following alternatives:</p> <ul style="list-style-type: none"> • Do not allocate specific sites or preferred areas <p>The Third Stage Consultation MLP makes clear that there are few practical benefits to allocating specific sites or preferred areas; proposals would be assessed against exactly the same policy whether or not they were within these allocations. The only meaningful benefit to the allocations is to provide a degree of certainty to industry and communities over where minerals operations may be expected to come forward. As noted in section 7.6.1 above, however, some allocations within the last Minerals Local Plan were not developed, so the allocations are no guarantee of development. Not allocating specific sites or preferred options is not a reasonable alternative, as government guidance is clear that "<i>Mineral planning authorities should plan for the steady and adequate supply of minerals in one or more of the following ways (in order of priority):</i></p> <p><i>1. designating Specific Sites ...</i></p>	<p>of The Town and Country Planning (Local Planning) (England) Regulations 2012 (as amended), local planning authorities must review local plans at least once every five years from their adoption date to ensure that policies remain relevant and effectively address the needs of the local community.</p> <p>The draft method for identifying specific site and preferred area allocations in the separate Mineral Site Allocations Development Plan Document has been developed alongside considering the approach to strategic corridors and areas of search, so that screening criteria can be applied consistently across all aspects, and this will be consulted on alongside the Fourth Stage Consultation on the Minerals Local Plan as the first step in progressing the Mineral Site Allocations Development Plan Document.</p>

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		<p>2.designating Preferred Areas ... 3.designating Areas of Search".</p> <ul style="list-style-type: none"> • Allocate a larger or smaller number of specific sites/preferred areas <p>This is another alternative that is not reasonable, as the sites and preferred areas must be subject to an evidence-based deliverability assessment, meaning that their allocation is based on technical, rather than policy reasons (although the technical appraisal is to enable policy aims). Allocating sites and preferred areas that cannot be delivered would not be reasonable. Similarly, failing to allocate sites and preferred areas that are deliverable and potentially-deliverable, respectively, would not be reasonable.</p> <p>The SA Environmental Report appraised each of the 30 site proposals submitted by landowners and operators, rather than only those sites proposed as Specific Site or Preferred Area allocations. This showed that the three specific sites and two preferred areas do not immediately appear the most sustainable options, but there is insufficient evidence to conclusively state whether or not they may be better or worse than some of the other alternatives.</p>	
Option 2: Direct development to areas which would cause least harm			
<p>An alternative considered was to develop the spatial strategy based on directing development to areas of least harm.</p> <p>This was considered to be a reasonable alternative and would most likely be achieved through identifying environmentally important features and</p>	<p>Building on the direction established through the First Stage Consultation, the spatial strategy in the Second Stage Consultation pursued directing development to areas which could deliver most benefit, with protection of assets to be secured through criteria based policies.</p>	<p>As well as seeking to allocate Specific Sites and Preferred Areas, the spatial strategy in the Third Stage Consultation built on the direction established through the First and Second Stage Consultations, directing development to areas which could deliver most benefit, with protection of assets to be secured through criteria</p>	<p>Concerns were raised in response to the Third Stage Consultation about the robustness of the site selection process in light of site allocations establishing the principle of development if these had not been subject to sufficiently robust assessment against environmental or amenity issues.</p>

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<p>sensitive receptors and using these to identify areas that were "unsuitable" for mineral development. This approach was used in the County of Hereford and Worcester Minerals Local Plan 1997 and would offer a level of protection to the environment and communities. However after careful consideration this option was not pursued as the Mineral Planning Authority did not think that this protection would be any greater than that which could be achieved through strong development management policy criteria which offer a much more sophisticated, flexible and effective approach to assessing potential harm and managing appropriate mitigation. This opinion was based on local experience and examples of best practice.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>SA recommendations:</p> <p>It is not clear why the Minerals Local Plan is being used as the starting point for identifying constraints (see MLP section 11.53/54, Appendix 1, and elsewhere). The MLP recognises that the 'old' MLP is out-dated, and there seems little value in justifying the inclusion or exclusion of constraints by reference to the old plan. It would be better to approach the constraints anew, informed by the relevant up-to-date policy context and local issues, as for other aspects of the MLP.</p> <p>The value of the section on buffers and stand-offs was questioned, stating that it would probably be sufficient to briefly state that no buffers or stand-offs are being proposed, because the nature, scale and impact of minerals development will be considered through criteria-based policies.</p>	<p>based policies.</p> <p>SA recommendations:</p> <p>The SA Environmental Report appraised the potential alternative of "focus[ing] strategic corridors where green infrastructure is in poor condition", stating that opportunities not only to protect, but also to improve, extend and enhance green infrastructure are strongly promoted throughout the plan, not least in the development management policies. The MLP could seek to direct this potential to those areas where the need is greatest. This would accord with national policy, which states that "Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework".</p> <p>In broad terms, the likely positive effects would be the improvement of some of the poorest areas of green infrastructure in the county. This could also play an important social role, as improving these areas could potentially open up new opportunities for people to enjoy the natural environment, through improved access and recreation and ability to experience the natural environment with the educational and health benefits this can bring. However, it would fail to achieve cohesiveness across the restoration areas compared to the MLP's proposed strategic corridors. Opportunities to secure enhancements at</p>	<p>To address this, the <i>Analysis of Minerals Resources</i> has been refreshed to take account of environmental and amenity screening criteria as set out in background document <i>Location of development: screening and site selection methodology</i>.⁴</p> <p>The role of the strategic corridors was also reviewed, and rather than having the status of areas of search in themselves, as in the Third Stage Consultation, the strategic corridors in the Fourth Stage Consultation instead provide policy direction, with areas of search being identified within them based on the mineral resource areas following application of the environmental and amenity screening criteria. In addition, to increase certainty over where mineral development is likely to take place and minimise conflict with other forms of development, the strategic corridor boundaries have also been trimmed to remove settlement boundaries and site allocations from adopted Development Plan Documents.</p> <p>By ensuring that the areas where most harm would result have been screened out and are not allocated as Areas of Search in the Fourth Stage Consultation, this means the Minerals Local Plan directs development to areas which would cause least harm.</p>

⁴ Both the *Analysis of Mineral Resources in Worcestershire* and the *Location of development: screening and site selection methodology* documents are available at www.worcestershire.gov.uk/mineralsbackground.

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		<p>a landscape scale would be likely to be lost, and so the delivery of restoration across multiple mineral sites that is 'greater than the sum of its parts' would be lost. The economic effects would be significantly negative, as the areas where GI is poorest are relatively small, and would include only a very small fraction of Worcestershire's viable mineral resource. This alternative, therefore, would wholly fail to provide for the supply of minerals where and when they are needed. As such, this can be discounted as a reasonable alternative.</p>	
Option 3: Direct development to areas which could deliver most benefit			
<p>An alternative considered was to develop the spatial strategy based on directing development to areas of greatest benefit.</p> <p>Although identifying areas of search would provide less certainty to developers and communities than allocating individual sites, this was considered to be a reasonable alternative based on best practice examples of habitat enhancement through mineral site restoration,⁵ and discussions with the Environment Agency about flood alleviation opportunities. The emerging Worcestershire Green Infrastructure Framework also informed this approach. It was considered that this positive approach was more likely to deliver benefits than option 2 above and that best fitted the requirement in the NPPF to</p>	<p>In order to build on the direction established through the First Stage Consultation to direct development to areas which could deliver greatest benefit, the following steps were undertaken as outlined in more detail below:</p> <ul style="list-style-type: none"> • consideration was given to whether areas of search could be defined for each type of mineral in Worcestershire - different approaches were taken forward for different mineral types • consideration was given to how areas of search (for aggregate minerals) should be defined • consideration was given to how the opportunity area (for clay) should be defined 	<p>The 30 sites submitted did not result in sufficient deliverable sites for allocation to meet the landbank requirements for the plan. Therefore it was clear that areas of search would still be required to enable further "windfall" sites to be developed.</p> <p>The ethos of the green infrastructure benefits approach in the Second Stage Consultation was largely supported, but some concerns were raised about aspects of the method for identifying the areas of search. The consultation responses and the Initial Sustainability Appraisal suggested that the thresholds used to identify the clusters of aggregate resources were either arbitrary or not fully justified in the document, and ignored the potential of smaller resource areas to deliver benefits across the different green</p>	<p>The spatial strategy in the Third Stage Consultation, with green infrastructure priorities for each strategic corridor, was well received, although the potential to better integrate flood betterment and water quality enhancements was raised. Comments also indicated that alterations were needed to strengthen the requirement for proposals to contribute positively towards the corridor priorities during both working and restoration phases and to clarify the need to balance comprehensive extraction of mineral resources with the need for landforms and restoration schemes which are appropriate within the landscape. There was also a misconception that the corridors and their priorities were entirely based on environmental considerations, and</p>

⁵ RSPB, Miro (2006) *Nature After Minerals: how mineral site restoration can benefit people and wildlife*
http://ww2.rspb.org.uk/Images/natureaftermineralsreport_tcm9-257075.pdf

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<p>pursue sustainable development by seeking positive improvements in the quality of the built, natural and historic environment, as well as enabling requirements for net biodiversity gain and the opportunities for the restoration of mineral working to contribute positively to flood betterment which is a high priority issue in Worcestershire. In addition:</p> <ul style="list-style-type: none"> it would enable the new plan to be in place more quickly in order to provide a robust policy framework for the county, it would set the framework to direct the location of all sites which was considered particularly important as a reliance on windfall sites was anticipated, it would enable planning and environmental constraints to be considered at application stage when detailed proposals would be known and could be fully assessed whilst maximising potential benefits from co-ordinated rather than piecemeal development, it was considered that a subsequent site allocations document could be pursued if this proved to be necessary through plan monitoring, and It was considered that protection of assets could be secured through criteria based policies. <p>This option was pursued in the First Stage Consultation which proposed developing the spatial strategy for mineral development based on working viable resources in the areas where there is</p>	<ul style="list-style-type: none"> consideration was given to how to direct development so that it would deliver benefits <p>Could areas of search could be defined for each type of mineral:</p> <ul style="list-style-type: none"> Aggregate minerals (crushed rock, sand and gravel) - to be taken forward through defined areas of search, because of the availability of data on the locations and quantity of these resources, the significant demand for aggregates and the limited landbank in Worcestershire. Relying on criteria based policies only was therefore ruled out as not a reasonable alternative. 2 areas of search for crushed rock and 17 areas of search for sand and gravel were identified (11 for terrace and glacial sand and gravel, and 6 for solid sands). Clay - Both criteria based policies and areas of search were identified as reasonable alternatives for clay because: <ul style="list-style-type: none"> data is available about the broad location of resources, but there is uncertainty over the quality and quantity of the resource, and although there is an existing landbank, there is also potentially significant demand. <p>To provide a balance between</p>	<p>infrastructure strands. The approach to clustering in the Second Stage Consultation was considered to be a poor tool for delivering a landscape scale approach, focusing on proximity of resources rather than whether the localities shared any issues or characteristics. As such it was felt that the clusters, as defined in the Second Stage Consultation, would make negligible contribution to the delivery of the vision.</p> <p>The spatial distribution of mineral resources and the ability to deliver benefits was therefore looked at afresh in developing the Third Stage Consultation document, considering each of the Green Infrastructure components to identify whether there was any coherence between resources on a landscape scale or whether a set of county-wide priorities would be a better approach. This consideration led to fewer, larger "strategic corridors" being identified which were given the status of areas of search, enabling priorities to be developed to guide how mineral working and restoration should take place to achieve locally appropriate benefits within each corridor.</p> <p>The definition of the strategic corridors was based on where clusters of locally and nationally important mineral resources exist, considered alongside each of the components of green infrastructure. The strategic corridors were defined following analysis of where the greatest green infrastructure gains can be delivered at a cohesive landscape scale, but no precise threshold is given as</p>	<p>therefore the influence of mineral resources and other economic and social factors needed to be made more explicit. There was also some concern that some of the strategic corridors are too wide to provide certainty.</p> <p>To address these issues, the strategic corridors have been reviewed following the reassessment of mineral resources (outlined above) to ensure they continue to represent significant clusters of mineral resources within coherent landscapes, and they have also been trimmed to remove settlement boundaries and site allocations from adopted Development Plan Documents in order to increase certainty over where mineral development is likely to take place and minimise conflict with other forms of development. The strategic corridors have been retained as a policy driver in the Fourth Stage Consultation, with the text of the policies and reasoned justification being amended to draw out the economic and social, as well as environmental, benefits of green infrastructure. Collaborative work has been undertaken with the Environment Agency and Lead Local Flood Authority to ensure flooding and water quality issues are better integrated. Policy MLP 3 "Green Infrastructure" has been included to help draw out the need to consider the local economic, social and environmental context of sites, climate change, and site-specific opportunities to contribute to the various green infrastructure components, as well as the strategic corridor priorities, and includes provision to ensure that green</p>

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<p>greatest ability for viable resources to be worked and restored to achieve restoration priorities informed by economic policies, environmental policies, community strategies and cross-cutting policies.</p> <p>This approach was considered to address the practical limitations associated with allocating sites and undertaking high-level assessment of whether sites would be "suitable". It was thought to be a positive and proactive approach to development which was especially important due to the need to enable adequate opportunities to increase low landbanks for sand and gravel and crushed rock. It was also considered to add much greater strategic direction than simply identifying known resources, which was already publically available information.</p> <p>This approach was largely supported in responses to the First Stage Consultation.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>uncertain data and significant demand, an "opportunity area" was identified for clay which had less weight than areas of search but more weight than relying solely on criteria based policies. The approach was considered to show the areas where clay working is possible and highlight its importance in the spatial strategy.</p> <ul style="list-style-type: none"> • Silica sand (naturally bonded moulding sand) - to be taken forward through criteria based policies only due to data limitations on the locations of silica sand deposits in the wilder Wildmoor Formation and minimal demand for naturally bonded moulding sand. The use of defined areas of search was determined not to be a reasonable alternative unless silica sand was identified as part of a wider sand and gravel area of search covering the Wildmoor Formation. • Building stone - to be taken forward through criteria based policies only, as very little data on the location of resources and little indication of demand. Areas of search for building stone was not a reasonable alternative due to the lack of data. 	<p>to the minimum size of viable resource that could constitute a corridor. The approach was developed in discussion with members of a Minerals Green Infrastructure Steering Group.</p> <p>Distribution of mineral resources:</p> <ul style="list-style-type: none"> • Aggregates – sand and gravel Key and significant terrace, glacial and solid sand resources were considered and clusters of these resources led to the identification of the Avon and Carrant Brook, Lower Severn, North West Worcestershire, and North East Worcestershire Strategic Corridors. The strategic corridors proposed in the Third Stage Consultation contained approximately 70% of Worcestershire’s key and significant sand and gravel resources. • Aggregates – crushed rock: During the preparation of the Third Stage Consultation significant discussion was undertaken with the West Midlands and surrounding Aggregate Working Parties about the recognised constraints on Worcestershire’s crushed rock resources.⁶ Whilst clusters of crushed rock resources were identified which could have been designated as a Malvern Hills 	<p>infrastructure benefits will be secured for the long term. Appendix 2 is included in the Fourth Stage Consultation document to set out how the strategic corridors have been identified and defined.</p> <p>The strategic corridors and the identified green infrastructure priorities direct mineral development to appropriate locations and will help to realise the potential for minerals development to address some of Worcestershire’s important economic, environmental and social issues. The priorities will drive how mineral working and restoration takes place in order to maximise the multifunctional green infrastructure gains at a landscape scale to benefit the environment, the economy and communities.</p> <p>It is considered that whilst individual sites could deliver on-site green infrastructure benefits in isolation, greater gains can be delivered by pursuing a coordinated approach to maximise the opportunities presented by mineral working throughout the entire life of the site. The priorities have been tailored to each strategic corridor, identifying integrated multifunctional priorities that are outcome focused. They are intended to enable the achievement of benefits across multiple sites that are greater than could be achieved by considering each site in</p>

⁶ See Worcestershire County Council (September 2016) Minerals Local Plan background document *Strategic cross boundary issue: Crushed rock supply in Worcestershire. Summary of action undertaken under the duty to cooperate.*

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	<ul style="list-style-type: none"> • Salt and brine - to be taken forward through criteria based policies as limited data on the location of halite (salt) resources, no data on the extent of brine resources and little indication of demand. Areas of search for salt and brine were not a reasonable alternative due to the lack of data. • Coal - although both criteria based policies and areas of search were identified as reasonable alternatives, with some data available on the location of coal resources, there was little indication of demand. Consultation with the industry body recommended that criteria based policies were applicable in Worcestershire because of the limited area and shallow coal resources. Therefore criteria based policies were taken forward. • Unconventional hydrocarbons – to be taken forward through criteria based policies only, as there is no data available to suggest these resources exist in the county, therefore areas of search were not a reasonable alternative. <p>SA recommendations:</p> <p>None included</p> <p>Defining areas of search for aggregate minerals:</p>	<p>Strategic Corridor and a Bredon Hill Strategic Corridor, due to the impact of these constraints on potential deliverability of supply, it was not considered reasonable for these corridors to be included in the Spatial Strategy in the Third Stage Consultation. Instead, policy provision was made to enable crushed rock development to come forward outside the Strategic Corridors.</p> <ul style="list-style-type: none"> • Building stone Following the Second Stage Consultation, former building stone quarries were identified through the Herefordshire and Worcestershire Earth Heritage Trust's project <i>A Thousand Years of Building with Stone</i>. The quarries identified (up to March 2016) were considered to be the best indication of where building stone resources are likely to be found in Worcestershire. These did not indicate any significant clusters which should drive the identification of strategic corridors, but the corridors proposed in the Third Stage Consultation contained approximately 9% of the former building stone quarries identified (up to March 2016), and policy provision was also made to enable building stone development to come forward outside the Strategic Corridors. • Clay Following the Second Stage Consultation, the Earth Heritage 	<p>isolation. Identifying these priorities will provide certainty to developers and decision makers as to the expectations for mineral working and restoration, whilst the plan as a whole provides the flexibility for site-specific issues to be taken into account. As the identified priorities are multifunctional and are appropriate to the landscape character, ecology, geology and hydrology of the corridor, they should be cost effective for developers to implement whilst maximising gains across the components of green infrastructure.</p>

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	<p>The significance of each mapped deposit was established using the method set out in the background document <i>Analysis of Mineral Resources in Worcestershire</i>. Those identified as "key" or "significant" were taken forward and those identified as "not significant" or "compromised" were not taken forward.</p> <p>Identifying all key and significant resources as areas of search was not considered to be a reasonable alternative as it would not set a direction for the location of development in the county, would not provide certainty for industry or communities and would not take into account the contribution mineral development can make to wider strategic priorities.</p> <p>Clusters of more than 200ha of resource were identified by analysing where "key" resources and "significant" resources within 500m of a "key" resource could be found, and a 250m buffer was applied around those clusters to identify areas of search. The 200ha threshold for areas of search was developed with the support of the Minerals Green Infrastructure Steering Group as a reasonable alternative which was pursued in the Second Stage Consultation as it was considered to be a scale at which there is realistic potential to deliver strategic restoration benefits and to enable development of a landscape-scale approach to restoration and identification of priorities which could be delivered across multiple sites over the life of the Minerals Local Plan.</p>	<p>Trust helped us to better understand the nature of the Mercia Mudstone Group, and that not all the formations within it would be suitable for use as brick clay. Considering this led to the identification of the Salwarpe Tributaries Strategic Corridor. This area was identified to include the area where modern commercial brick clay working has taken place and is therefore most likely to offer opportunities for further brick clay working. The strategic corridors proposed in the Third Stage Consultation contained approximately 20% (by area) of the Mercia Mudstone Group, as well as areas of Sherwood Sandstone and Lias Group deposits which may possess some clay properties.</p> <ul style="list-style-type: none"> • Salt and brine No further information was available following the Second Stage Consultation to indicate where brine resources exist, but policy provision was made to enable salt or brine development to come forward outside the Strategic Corridors. • Silica sand The consideration of solid sand resources (for aggregates) included the Wildmoor Formation which contains silica sand (naturally bonded moulding sands). The North West Worcestershire and North East Worcestershire Strategic Corridors were identified around 	

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	<p>As well as ensuring the areas of search were of a sufficient scale to enable landscape-scale restoration priorities to be achieved, the overall method was intended to ensure the Areas of Search were of a sufficient scale to enable new sites which would require significant investment in plant to be developed (key resources of over 2 million tonnes were considered able to provide this opportunity), whilst taking account of other significant resources which may be able to be worked in association if they were in close enough proximity.</p> <p>A further alternative was to consider whether the areas of search were in locations that were best placed to serve likely market needs over the life of the plan. To do this, the level of housing growth identified in adopted and emerging Local Plans for settlements in and around Worcestershire was used as a proxy for market demand, and the following distance thresholds applied:</p> <ul style="list-style-type: none"> • 15km - settlements where 1,500 homes or more are proposed over the plan period • 10km – settlements where 750-1,500 homes are proposed over the plan period • 5km – settlements where 250 – 750 homes are proposed over the plan period <p>Where an area of search was identified as being outside of these “market-pull” thresholds, it was intended to exclude it from further consideration, however all areas of search at this stage were within the relevant proximity of one or more of</p>	<p>this formation. The strategic corridors proposed in the Third Stage Consultation contained approximately 72% (by area) of the Wildmoor Formation.</p> <p>Green infrastructure components:</p> <ul style="list-style-type: none"> • Landscape: Within Worcestershire, there is a strong relationship between the location of mineral resources and the character of landscapes where they are found. The Worcestershire the <i>Landscape Character Assessment</i> identifies the landscape character types for individual parcels of land, establishing precise boundaries where the landscape character changes. Landscape character reflects many other aspects of green infrastructure and was considered to provide a robust basis for identifying cohesive clusters of resources and to identify the precise boundaries of the strategic corridors. Some of the corridors consist of more than one landscape type where the characteristics of those landscape types are similar or complementary. This approach does not take account of the condition of the landscape or identify one landscape type as more able or less able to accommodate mineral development than another, but it is a useful indicator of cohesion within corridors. The characteristics of the landscape 	

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	<p>these settlements.</p> <p>These thresholds were developed taking account of information from the Mineral Products Association that about 80% of mineral products are used within 30 miles (48 km) of the quarry they are worked at. The 15km threshold to show the highest level of demand (approximately a third of the distance identified by the Mineral Products Association) with the reduced thresholds of 10km and 5km to indicate where levels of demand are likely to be lower.</p> <p>Although it was acknowledged that this was a relatively crude indicator and did not take into account detailed criteria such as transport routes, and wider influence of larger sites, it did show that the majority of the county was covered by these distance thresholds, and therefore that there was likely to be some demand for mineral resources from all areas of the county. It was therefore considered that proximity to market was not a reasonable alternative as a primary driver for the spatial strategy.</p> <p>SA recommendations:</p> <p>None included.</p> <p>Defining the opportunity area for clay:</p> <p>The opportunity area was identified based on the Mercia Mudstone Group deposits as it was known that this is worked in Worcestershire for brickmaking and no information was</p>	<p>types provide a basis for locally appropriate priorities for each of the strategic corridors.</p> <ul style="list-style-type: none"> • Biodiversity: There is a strong coherence between landscape character and the types of habitats that exist within them. The hedgerows, streams and other features that contribute towards landscape character also contribute towards habitat networks and the movement of species. The consideration of landscape character in defining the boundaries of the strategic corridors was therefore considered an appropriate mechanism for identifying landscape-scale coherence in relation to biodiversity. The ecological zones identified in <i>Biodiversity and mineral sites in Worcestershire: Guidance for the sustainable management of biodiversity action plan habitats at Worcestershire mineral sites</i>, the patterns of Biodiversity Action Plan priority habitats identified in the <i>Worcestershire Habitat Inventory</i> and the <i>Biodiversity Delivery Areas</i> identified by the Local Nature Partnership also verify the validity of this approach. This approach does not take account of the condition of existing habitats as this is more meaningful on a site-by-site basis than on a corridor scale. However the distribution of high value habitats such as SSSIs, BAP habitats and Local Wildlife Sites 	

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	<p>available to identify whether any sub-groups or particular areas of the resource are more important than others to refine this to meaningful areas of search.</p> <p>No other reasonable alternatives were identified for defining the opportunity area.</p> <p>SA recommendations:</p> <p>None included.</p> <p>Directing development to deliver benefits:</p> <p>Strategic restoration priorities:</p> <p>These were identified for each of the areas of search and the opportunity area, with restoration profiles for each of these included as appendices in the Second Stage Consultation</p> <p>The significance of each of the strategic restoration priorities in each area of search was assessed as being:</p> <ul style="list-style-type: none"> • A determining factor, • A significant component, • A consideration to be integrated into restoration where possible, or • Not likely to be a significant consideration in that particular area of search <p>In order to give strategic direction in the Spatial Strategy, the patterns of determining factors for the areas of search were used to identify overarching considerations for different</p>	<p>has been considered alongside the ecological zones and Biodiversity Delivery Areas to inform the priorities set for each corridor.</p> <ul style="list-style-type: none"> • Agriculture and soils: There is significant overlap between mineral resources and the distribution of Best and Most Versatile Agricultural Land. Although not normally considered a component of green infrastructure, local agricultural practices influence landscape character and as such using landscape character to inform the boundaries of the strategic corridors is a useful way of taking agriculture into account. This is more appropriate for identifying coherence than considering the distribution of Best and Most Versatile Agricultural Land, as it allows the predominant land-use to be considered, identifying patterns of arable use, horticulture, grazing or mixed agriculture at a landscape-scale. The distribution of Best and Most Versatile Agricultural Land has informed the priorities for each strategic corridor. • Water environment: River catchments are large areas and were not consider a meaningful basis on their own to facilitate the integration of other green infrastructure components, however they have informed the definition of the strategic corridors. The boundaries of the 	

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	<p>sections of the county and were shown on the spatial strategy diagram. This was considered to provide a real opportunity to deliver strategic restoration benefits rather than piecemeal restoration schemes.</p> <p>The Second Stage Consultation then set out reasonable alternatives for driving the delivery of the restoration priorities for each area of search</p> <p>Alternative A: To develop a single set of policies that would apply to all areas of search and the opportunity area for clay, Alternative B: To develop individual policies for each area of search and the opportunity area for clay, outlining area specific issues for each one, Alternative C: To develop a “spatial master-plan” and policies for each area of search and the opportunity area for clay, outlining and visually interpreting the area specific issues for each one</p> <p>The options of developing these alternatives in combination with future production of an SPD was explored as a consultation question.</p> <p>The Second Stage. Consultation did not include any preference for which of these alternatives should be pursued.</p> <p>SA recommendations:</p> <p>The MLP could set out a restoration approach that is guided more by economic and social opportunities, either as an equal focus alongside the current environmental (GI) goals, or as the primary driver(s).</p>	<p>Lower Severn Strategic Corridor and Salwarpe Tributaries Strategic Corridor are partly defined by the catchment areas identified in the <i>River Severn Catchment Flood Management Plan</i>.</p> <ul style="list-style-type: none"> • Geodiversity: Although the occurrence of features of geodiversity interest is dependent on the underlying geology, the distribution of designated features did not generally show a strong geographic pattern of distribution. Therefore geodiversity was not used to identify the boundaries of the strategic corridors, but did inform the priorities for the strategic corridor which overlap with the Abberley and Malvern Hills Geopark and the Malvern Hills and Cotswolds Areas of Outstanding Natural Beauty where there are clusters of designated and non-designated features of interest. • Historic environment: The historic environment is formed of many different features and their settings, and this is often best considered on a local-scale. The distribution of designated and non-designated heritage assets and the <i>Worcestershire's Historic Landscape Characterisation</i> were considered, but no patterns were identified to define the strategic corridors on the basis of the historic environment. However, there is a strong relationship between landscape character and 	

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	<p>Alternative A is 'light touch', providing only high-level guidance and policies to be interpreted by each minerals developer as sites come forward. Alternative B would provide a greater level of guidance by specifying the overall priorities for each area of search, as well as setting out broad principles of how linkages can be made. Alternative C is the most prescriptive, providing master-plans, informed by the Green Infrastructure Partnership, for each area of search. One issue that should be considered is how regularly the evidence base will need to be updated and how simple it will be to do this through either the MLP itself or through specific SPDs.</p> <p>The MLP proposes, broadly speaking, that restoration efforts are concentrated on ensuring the best resources remain in good condition. While it could be argued that the 'hierarchy' approach perpetuates the low quality status of some habitats (in the 'integrate' approach, for example, it is only high-value features that should be retained or restored), this is necessarily pragmatic and recognises that particular sites, even in combination, are unlikely to create new features such that fragmented habitat becomes high-quality. It would therefore be misguided to expend limited resources improving poor-quality habitat that does not link well into the wider network.</p> <p>The MLP's alternative options for restoration policies include listing/mapping known assets within the</p>	<p>the historic environment, with landscape influencing historic land-uses and these land-uses and features then influencing the landscape character. Defining the boundaries of the strategic corridors based on landscape character was therefore considered an appropriate mechanism for addressing the historic environment at a landscape scale. <i>Worcestershire's Historic Landscape Characterisation</i> was used to verify the validity of this approach.</p> <ul style="list-style-type: none"> • Access and recreation: Patterns of access and recreation assets (rights of way, long distance paths, accessible natural green space) were considered, but no patterns were identified to define the strategic corridors on the basis of access and recreation. However patterns of access and recreation were closely associated with specific landscape types, as the patterns of land-use and enclosure influence the extent of public access networks. This further supports the use of landscape type as the primary mechanism for identifying the boundaries of the strategic corridors. <p>The strategic corridors do not include all known mineral resources in the county, but seek to reflect a 'best fit' of where mineral development and the potential for green infrastructure enhancement overlap</p>	

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	<p>policy and spatial plan. Whilst this would ensure those known assets are taken fully into account in development restoration proposals, it is unclear how the policy could be kept sufficiently up to date. Even the further option of using SPDs to expand on the main policy could be too restrictive, given the long timescales involved in SPD preparation and revision. If this approach is to be progressed, it is important that some form of dynamic database is used, or that applicants are referred to the source information. A failure to reflect up-to-date data could risk those assets identified after the MLP is published being overlooked in restoration proposals, and potentially compromised. Although Alternatives B and C potentially offer a finer degree of detail, the valuable flexibility of Alternative A is lost.</p>	<p>and can best work together. Some mineral resources in close proximity to the strategic corridors were excluded because, being in different landscape types, they were not considered to have significant potential to contribute towards the delivery of coordinated benefits and are therefore unable to contribute to a cohesive and coordinated approach at a landscape-scale. While individual sites might be able to deliver on-site green infrastructure benefits in isolation, it was considered that much greater gains could be delivered from a network approach. The <i>Third Stage Consultation</i> sought to consider the nature of the issues and the opportunities for mineral working to contribute to them throughout the entire life of the site rather than only through site restoration. Rather than ranking the issues to give a generic priority level, the <i>Third Stage Consultation</i> gave a tailored approach for each strategic corridor, identifying integrated multifunctional priorities that are outcome focused and specific to each strategic corridor. They are intended to give greater direction for the developer and decision maker and provide the flexibility for site-specific issues to be taken into account, enabling the achievement of benefits across multiple sites that are greater than could be achieved by considering each site in isolation.</p> <p>SA recommendations:</p> <p>The SA Environmental Report assessed the use of Environmental Character Areas (ECA)s from the Worcestershire Green Infrastructure Strategy instead of strategic</p>	

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		<p>corridors, this was appraised as a reasonable alternative by the SA. This concluded that use of the ECA's would facilitate enhanced performance against economic objectives as minerals could be extracted wherever they were found, could better take into account cultural heritage, architecture and archaeology as the historic environment is considered in more detail in the ECA's, but would lead to worse performance against the climate change and energy objective.</p> <p>The SA Environmental Report further comments that the sole use of ECA's without some form of targeting is unlikely, given the requirement of national policy to develop "areas of search". The ECA objectives are also relatively generic and further work would be required to develop them into detailed plan objectives.</p> <p>Other options considered in the SA Environmental Report were the use of biodiversity delivery areas, and flood catchment, both of which were eliminated as not reasonable alternatives as they do not take minerals into account.</p> <p>The SA Environmental Report further debated a different number of strategic corridors. Whilst supporting the elimination of the two crushed rock corridors due to their deliverability, corridors of different sizes with finer grained information allowing local constraints to be better reflected was considered a reasonable alternative. Although this could offer benefits for local considerations including social and economic, it would lose the strategic benefits of the larger corridors is corridor</p>	

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		and sites are not well connected or for larger scale issues such as flooding.	

6. Evolution of the Steady and Adequate Supply of Mineral Resources

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<p>Annual requirements, aggregates.</p> <p>In Autumn 2012 the Council published The Draft Local Aggregates Assessment for Worcestershire 2012 for consultation. This document set out 9 alternative methods for calculating provision requirements which assessed each option in full.</p> <p>The First Stage Consultation set out the levels of aggregate minerals that were thought to be required within the plan period, based on evidence in the Local Aggregates Assessment (2012) concluding that the requirements for Worcestershire should be based on a range, between the highest and lowest of the alternative options. The annual figures were not included in the First Stage Consultation, but this equated⁷ to:</p> <ul style="list-style-type: none"> • Sand and gravel: 0.78-1.57 million tonnes per annum • Crushed rock: 0.14-0.28 million tonnes per annum • Secondary and recycled 	<p>As a result of consultation feedback, the methodology in the Local Aggregates Assessment was altered. The Local Aggregate Assessment for Worcestershire 2013 used a phased approach to forecasting demand to give minimum figures rather than a range, and the Second Stage Consultation was based on this.</p> <p>Up to and including 2016: The Council would continue to follow the agreement between West Midlands Mineral Planning Authorities and industry regarding the provision to be made by each authority. This agreement does not extend beyond 2016.</p> <ul style="list-style-type: none"> • Sand and gravel - 0.871 million tonnes per annum • Crushed rock - 0.163 million tonnes per annum <p>Beyond 2016: Annual provision requirements will be calculated from a</p>	<p>Following the Second Stage Consultation, guidance on the production of Local Aggregates Assessments was published in national Planning Practice Guidance (March 2014) and by the Planning Officers Society and Mineral Products Association (April 2015) which changed the approach to the production of LAA's nationally. The Worcestershire Local Aggregate Assessment 2016 (using data up to December 2015) was developed in accordance with the latest guidance, taking into account consultation comments received on previous versions and the comments of the West Midlands Aggregate Working Party. It was also informed by the focused discussions which were undertaken with the West Midlands and surrounding Aggregate Working Parties about the recognised constraints on Worcestershire's crushed rock resources.⁸</p> <p>The Third Stage Consultation was based</p>	<p>Some comments on the Third Stage Consultation suggested that the annual and total levels of provision the plan will make should be included within the policy. Although it is recognised that many Minerals Local Plans have included an annual provision figure within policy, it is considered that this was a sensible approach when plans were based on a set "annual apportionment" figure which the plan should seek to achieve. However, as the latest national requirements and guidance are for a Local Aggregates Assessment (LAA) to be prepared and updated annually taking into account a rolling average of 10-years sales data, other relevant local information, an analysis of supply options, and an assessment of the balance between demand and supply, the resulting "Annual Production Guideline" will inevitably vary from year to year. It is therefore considered that inclusion of an</p>

⁷ The lower figures in the range were static, but the higher figures for sand and gravel and for crushed rock increased over the anticipated life of the plan. The figures quoted here are those projected for 2035, as per Table 4.4 of the Draft Local Aggregates Assessment 2012, available at www.worcestershire.gov.uk/amr.

⁸ See Worcestershire County Council (September 2016) Minerals Local Plan background document *Strategic cross boundary issue: Crushed rock supply in Worcestershire. Summary of action undertaken under the duty to cooperate.*

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<p>aggregates: 0.31-0.42 tonnes per annum</p> <p>SA recommendations: None included.</p>	<p>rolling average of annual sales levels in Worcestershire in the last 10 years.</p> <ul style="list-style-type: none"> Sand and gravel - 0.764 million tonnes per annum (this was the current figure, but it was stated that this would be updated annually) Crushed rock - 0.118 million tonnes per annum (this was the current figure, but it was stated that this would be updated annually) <p>The Second Stage Consultation did not include annual provision figures for secondary or recycled aggregates, stating that "Provision [for secondary and recycled aggregates] is addressed through the Waste Core Strategy and is monitored through the Annual Monitoring Report under the Waste Core Strategy monitoring indicators. This strategy seeks to achieve enough capacity to recycle 75% of construction and demolition waste."</p> <p>SA recommendations:</p> <p>The simplest approach, for plan making and for interpretation by applicants and others, would be to adopt the 10 years' sales averages as the defining measure throughout the entire plan period. This would have the benefit of avoiding two different calculations and accommodating the changes in provision that arise accordingly. However, this would fail to recognise the more robust, evidence-based apportionments under the RAWP which the MLP accommodates.</p>	<p>on the Local Aggregates Assessment 2016.</p> <ul style="list-style-type: none"> Annual production guideline for sand and gravel: 0.637 million tonnes per annum Annual production guideline for crushed rock: 0 (zero) tonnes per annum <p>The Third Stage Consultation did not include annual provision figures for secondary or recycled aggregates, stating that "some responses suggested that targets should be set for secondary and recycled aggregates to reduce the demand for primary aggregates, and the Initial Sustainability Appraisal suggested that an explicit, positive approach to secondary and recycled aggregates in the Minerals Local Plan would help to strengthen resource efficiency. The updated methodology used in Worcestershire's 2016 Local Aggregate Assessment considers substitute, secondary and recycled materials and the potential to increase contribution from secondary and recycled materials before considering the amount of primary materials required. The policies in this Third Stage Consultation have been developed to encourage the use of substitute, secondary and recycled materials and mineral wastes to minimise the requirement for all types of primary mineral resources, not just aggregates. However, there is very little data available."</p> <p>SA recommendations:</p>	<p>annual (or total) supply figure within the policy itself would become out of date almost immediately, and is therefore not a reasonable option.</p> <p>In addition, the Minerals Local Plan is not able to control whether a particular amount of mineral is extracted and sold in any particular year, but it can ensure that a steady and adequate supply is secured through enabling planning permissions for a sufficient landbank of reserves and sufficient productive capacity to be maintained. It is considered that the policy will be more robust if it seeks to provide an adequate supply by maintaining an adequate landbank rather than seeking an annual provision figure. This would also enable annual supply to be increased if the adopted but out-dated Minerals Local Plan has been responsible for artificially suppressing supply, or if market demands change significantly.</p> <p>Following the Third Stage Consultation, a further Local Aggregate Assessment using data up to December 2016 was produced, which took account of updated practice guidance from the Planning Officers Society and Mineral Products Association (May 2017), and comments from the West Midlands, East Midlands and South West Aggregate Working Parties.</p> <p>The Fourth Stage Consultation uses the Local Aggregate Assessment (using data to December 2016) as its baseline, with reasoned justification referring to the annual production guidelines of 0.607 million tonnes per annum of sand and gravel and 0 (zero) tonnes per</p>

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	<p>Expressing levels as maxima: Expressing levels as maxima, rather than minima, could lead to beneficial sustainability impacts for certain criteria, as the risk of environmental degradation arising from minerals from minerals development would be limited; however, significant negative impacts would be likely to arise, through the importation of minerals from outside the county, adding to CO2 emissions and creating unsustainable patterns of development. Limiting aggregate levels could also increase construction costs in Worcestershire due to scarcity of resources, and compromise delivery of essential economic and social development, and housebuilding. This approach would not be compatible with national policy and was not considered as a reasonable alternative in plan preparation.</p> <p>Including a target for recycled/secondary aggregates: Whilst the level of such aggregates was built into levels of provision for primary aggregates, a clearly expressed target could raise the profile of the need to minimise extraction of new resources and could help increase resource efficiency.</p>	None included.	<p>annum of crushed rock, but also stating that the plan has been developed to be flexible enough to accommodate changes to the balance of demand and supply identified in the Local Aggregate Assessment annually.</p> <p>The policies in the Fourth Stage Consultation continue to encourage the use of substitute, secondary and recycled materials and mineral wastes to minimise the requirement for all types of primary mineral resources, but no additional data has become available to enable any targets to be set.</p>
Aggregate landbanks			
<p>The First Stage Consultation identified a required level of sand and gravel provision of 18-35 million tonnes; 4-7 million tonnes of hard (crushed) rock; and 5-7 million tonnes of secondary and recycled aggregates over the life of the plan.</p>	<p>Evidence showed that Worcestershire did not have a sufficient landbank of resources to satisfy national policy requirements.</p> <p>Quantity of landbank shortfalls: Three options for assumptions relating</p>	<p>As a result of the SA and consultation responses, the Third Stage Consultation considered sand and gravel requirements separately to crushed rock.</p> <p>Sand and gravel: Policy MLP8 only referred to the need to increase the landbank of permitted sand and gravel reserves and subsequently</p>	<p>Sand and gravel: Following the Third Stage Consultation, planning permissions had been granted for additional sand and gravel reserves. These were taken into account in the Local Aggregate Assessment using data up to December 2016 which provides the baseline for the Fourth Stage</p>

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<p>This was based on the cumulative total for annual provision between 2015-2030 with an additional provision of 7 years for sand and gravel, and 10 years for crushed rock to allow for the minimum required landbank at the end of the plan period.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>to the quantity of the shortfall were proposed in the Second Stage Consultation Document:</p> <p>A) Assume there is no permitted landbank at the start of the plan period: This method would make provision for 7 years of sand and gravel (6.1 million tonnes) and 10 years of crushed rock (1.63 million tonnes). This approach was considered likely to be realistic for crushed rock and would avoid the risk of under-provision for sand and gravel This was the preferred option.</p> <p>B) Assume the shortfall in landbank continues at current levels: This method would make provision for 2.5 years of sand and gravel (2.18 million tonnes) and 6.5 years of crushed rock (1.06 million tonnes). There was considered to be a moderate risk of under-provision if this option was selected.</p> <p>C) Assume there is no shortfall in landbank at the start of the plan period: This method would not make provision for any shortfall in landbank (0 years of sand and gravel and 0 years of crushed rock). There was considered to be a high risk of under-provision if this option was selected.</p>	<p>maintain them at a minimum of 7 years. Tonnages were not included in the policy to allow the supply/requirement balance to reflect changes in the annual Local Aggregates Assessment and avoid quickly becoming out of date, but estimated requirements were included in the reasoned justification, stating that "in combination with annual production requirements, the Minerals Local Plan aims to enable at least 16.254-16.304 million tonnes of sand and gravel in order to reach and subsequently maintain a 7 year landbank of permitted reserves to 2035 and beyond".</p> <p>Because of the low starting landbank level (which at 31st December 2015 stood at 1.41-1.48 years), the policy required the landbank to be increased as quickly as possible in the period 2016-2025, and subsequently maintained at the 7 year level as a minimum.</p> <p>Crushed rock:</p> <p>Policy MLP9 sought to enable the increase or maintenance of the landbank of crushed rock, and the maintenance or enhancement of productive capacity. Unlike sand and gravel, the policy did not seek to deliver a minimum landbank. This reflected the reality that there are no current permitted reserves within Worcestershire and the recognised</p>	<p>Consultation, meaning that the landbank at the end of 2016 stood at approximately 7 years,¹⁰ meeting the requirement for a minimum of 7 years set out in national policy.</p> <p>This means that the Fourth Stage Consultation no longer needs to include a mechanism to increase the landbank to minimum levels as these have already been reached, and therefore Policy MLP 10 now requires applicants to demonstrate the contribution the proposed development will make towards maintaining a landbank of permitted sand and gravel reserves in Worcestershire of at least 7 years and towards enabling Worcestershire's productive capacity for sand and gravel supply to be maintained or enhanced.</p> <p>The reasoned justification states that "The Minerals Local Plan enables the provision of at least a further 11.53 million tonnes of sand and gravel over the life of the plan to maintain a landbank of at least 7 years to 2035 and beyond... whilst being flexible enough to accommodate changes to the balance of demand and supply identified in the Local Aggregate Assessment annually."</p> <p>Some responses to the Third Stage Consultation questioned how this would be delivered, and therefore the reasoned justification in the Fourth Stage Consultation states that delivery</p>

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	<p>Milestones for addressing the landbank shortfall:</p> <p>The Second Stage Consultation also put forward three alternative approaches to setting milestones to achieve the landbank targets:</p> <p>a) Aim for permitted reserves that will provide a minimum 7 year landbank for sand and gravel and 10 year landbank for crushed rock throughout the plan period</p> <p>b) Aim for permitted reserves that will provide a minimum 7 year landbank for sand and gravel and 10 year landbank for crushed rock by halfway through the plan period</p> <p>c) Aim for permitted reserves that will provide a minimum 7 year landbank for sand and gravel and 10 year landbank for crushed rock by the end of the plan period</p> <p>The Second Stage Consultation expressed a preference for option b) as it was considered to achieve the best balance between an ambitious and a deliverable approach.</p>	<p>constraints on Worcestershire's crushed rock resources⁹ which are likely to inhibit crushed rock development in Worcestershire for the foreseeable future.</p> <p>SA recommendations:</p> <p>Seeking to reach a 10 year landbank of crushed rock as soon as possible This alternative would better accord with national policy, which states that <i>"planning authorities should plan for a steady and adequate supply of aggregates by [inter alia] making provision for the maintenance of landbanks of at least ... 10 years for crushed rock"</i>. It is, however, not considered a reasonable alternative, as evidence, including cross-boundary discussions, demonstrates that crushed rock production is unlikely to exceed 0 tonnes per annum; setting a landbank target that is not practically achievable is not reasonable.</p> <p>Secondary and recycled aggregates: The Third Stage Consultation maintains the approach of not having a target level of provision of recycled/secondary aggregates, as "there are no reliable assessments to indicate the level of demand for or contribution to sustainable</p>	<p>of a steady and adequate supply is supported by the identification of areas of search, and that specific sites and preferred areas will be allocated in a separate Mineral Site Allocations Development Plan Document.</p> <p>Crushed rock:</p> <p>In the Third Stage Consultation, the policy did not include reference to a minimum landbank for crushed rock (as outlined in the Third Stage Consultation column). However, consultation responses highlighted that this was not in conformity with National Policy, despite the constraints on Worcestershire's crushed rock resources. In the Fourth Stage Consultation, policy MLP 11 therefore requires applicants to demonstrate the contribution the proposed development will make towards maintaining a landbank of permitted crushed rock reserves in Worcestershire of at least 10 years and towards enabling Worcestershire's productive capacity for crushed rock supply to be maintained or enhanced. The reasoned justification recognises that the constraints surrounding Worcestershire's crushed rock resources mean that crushed rock</p>

¹⁰ At 31st December 2016, Worcestershire had 4.244-4.294 million tonnes of permitted sand and gravel reserves (due to one site submitting their remaining reserve figure as a range). The landbank therefore stood at 6.99-7.07 years. See Worcestershire County Council (July 2018) *Worcestershire Local Aggregate Assessment (using data covering the period up to 31/12/2016)*.

⁹ See Worcestershire County Council (September 2016) Minerals Local Plan background document *Strategic cross boundary issue: Crushed rock supply in Worcestershire. Summary of action undertaken under the duty to cooperate*.

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	<p>An equal number of responses agreed and disagreed with option b) being used as the preferred option and basis for the vision. Some written responses suggested that whilst option b) was sensible in terms of trying to meet the requirements outlined in national policy and giving a realistic timeframe to achieve the delivery of the required landbank, it should not lessen the impetus to try and achieve the landbank reserves sooner. Others suggested that full provision should be aimed for throughout the plan period, preferably with the allocation of specific sites at the beginning and falling back on areas of search towards the end of the plan period if necessary. The Initial Sustainability Appraisal stated that option b) suggested a lack of urgency, and that calling for reserves to be met as soon as possible may be more encouraging.</p> <p>SA recommendations:</p> <p>To an extent, options B and C for identifying the quantity of landbank shortfalls are unlikely to be realistic and, as such, may not merit appraisal under the SA framework. However, due to the inherent difficulties in reaching a robust conclusion on the scale of landbank required, there are no obvious viable alternatives.</p> <p>The following potential alternatives were suggested:</p> <p>Expressing the levels of aggregates</p>	<p>aggregate supply at a local level". However, it does include a specific policy to encourage such provision, and this reflects the recommendation of the Initial SA Report. "Substitute materials" and "mineral waste" have now been added to the policy wording and references to reflect the provisions of the NPPF and to recognise the important role these materials can play in reducing the need for primary extraction.</p>	<p>working at a significant scale is unlikely during the life of the plan and the production guideline is likely to remain as 0 tonnes per annum, but that the plan has been developed to be sufficiently flexible to adapt to any changes in the production guideline. The Monitoring Framework also incorporates this flexibility by using the following target to determine whether any action is required in relation to the landbank for crushed rock:</p> <p><i>"The constraints on Worcestershire's crushed rock resources identified in the Minerals Local Plan are still extant and duty to cooperate discussions continue to indicate that surrounding Mineral Planning Authorities are able to accommodate supplying Worcestershire's demand for crushed rock</i></p> <p>OR</p> <p><i>Landbank of at least 10 years",</i></p> <p>Secondary and recycled aggregates:</p> <p>The policies in the Fourth Stage Consultation continue to encourage and enable the use of substitute, secondary and recycled materials and mineral wastes to minimise the requirement for all types of primary mineral resources, but no additional data has become available to enable any targets to be set.</p>

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	<p>as maxima, rather than minima: this could lead to beneficial sustainability impacts for certain environmental indicators, as the risk of environmental degradation arising from minerals development would be limited; however, significant negative impacts would be likely to arise, through the importation of minerals from outside the county, adding to CO2 emissions and creating unsustainable patterns of development. Limiting aggregate levels could also increase construction costs due to scarcity of resources, and compromise delivery of essential economic and social development, and housebuilding.</p> <p>Separate landbanks for sand & gravel, and crushed rock: Landbank calculations could be aided by considering the crushed rock and sand and gravel requirements separately. This would allow the greater confidence over likely levels of sand and gravel to be drawn out. This would more accurately reflect the different levels of reliability of data for each category of mineral and could improve sustainability performance by allowing more specific, tailored recommendations to be made.</p> <p>Include a target for recycled/secondary aggregates: Whilst the level of such aggregates is currently built into the Options, a clearly expressed target could raise the profile of the need to minimise extraction of new resources and could help increase resource efficiency.</p> <p>Maintaining a seven year landbank for crushed rock: The Hereford and</p>		

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	<p>Worcester Minerals Local Plan sought to maintain a seven year landbank of both crushed rock and sand & gravel. This was in accordance with national requirements at the time, contained in Minerals Planning Guidance This approach was no longer compliant with national policy, as it would result in a shortfall in provision of crushed rock. Having only a seven year landbank for both crushed rock and sand & gravel was therefore not a viable alternative.</p> <p>In relation to addressing the landbank shortfall, the Interim SA Report stated that Option B suggested a lack of urgency, and an option calling for reserves to be met as soon as possible may be more encouraging. However, the degree of influence the MLP can have on bringing forward the required landbank is limited, and successful delivery will largely depend on market forces and developer confidence. In seeking to reach a balance between ambition and realism, the MLP proposes a reasonable compromise in Option B. A brief commentary on why the current landbank is so low would be valuable here, as well as an indication of the likely economic/policy drivers needed to reverse what appears to be a recent under-provision in supply.</p> <p>Given the relative urgency in the need to build up minerals stocks (as demonstrated by an assumed landbank of zero), it is unclear why an intervention which could hasten permissions (the preparation of site-specific planning policies) will only being considered if targets are not being met by halfway</p>		

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	through (or by the end of) the plan period. This is a reactive approach, and a proactive approach would be more useful.		
Non-aggregate minerals annual supply and stocks of permitted reserves			
<p>The First Stage Consultation suggested that there was already a sufficient supply of silica sand and clay, and that neither salt nor coal were likely to be viable.</p> <p>SA recommendations:</p> <p>None included.</p>	<p>The Second Stage Consultation maintained the approach to non-aggregate minerals that was set out in the First Stage Consultation. No specific levels of provision were set out, as there was either:</p> <ul style="list-style-type: none"> • already a sufficient landbank (for clay), • insufficient evidence of viability (building stone), • evidence that there was no viability (for coal, conventional and unconventional hydrocarbons, salt and brine), or • no evidence on which to set a required level of provision (silica sand). <p>SA recommendations:</p> <p>Silica sand: More information on the reasoning behind the proposed approach would be welcomed, including further explanation of why the methodology for calculating crushed rock and sand & gravel provision could not be applied to silica sand.</p> <p>Clay: The data supporting assumptions on the landbank of clay dates from November 2011, and there may be a need to revisit this evidence base to ensure the MLP is informed by the best available evidence.</p>	<p>Silica sand: A background document on silica sand was subsequently developed and published (2015) which considers the available data on silica sand sales. The policies in the <i>Third Stage Consultation</i> were developed to reflect this alongside national policy requirements.</p> <p>Clay: The background document on clay in Worcestershire was updated in summer 2015, although there was no more recent data on sales or the level of reserves.</p> <p>Coal: The background document on coal in Worcestershire was updated in summer 2015, confirming that "<i>CoalPro and the Coal Authority have confirmed that there is no surface coal resource in any meaningful sense in Worcestershire1 and that although deep coal reserves do exist at present the cost of establishing new, modern, deep mines would be prohibitive even if suitable resources existed</i>".</p> <p>The policies for industrial minerals supply (MLP 10 for brick clay, MLP 11 for silica sand, MLP 12 for building stone, MLP 13 for other locally and nationally important industrial minerals) do not set specific landbank targets, as there is insufficient evidence of supply and/or viability, or - in the case of brick clay – the existing permitted reserves are sufficient for the plan period.</p> <p>Policy MLP14 on energy minerals adopts</p>	<p>Consultation responses suggested that the policies for silica sand and brick clay should refer to specific landbank requirements to reflect national policy (referring to 25 years for brick clay, and 10 years for silica sand). This was considered, but was not pursued as there was some uncertainty over whether the national policy requirement was for those stocks of reserves to be maintained at a county level, or whether they were intended to apply at a site level to support specific plant or investment. Instead, the policies (MLP 12 and MLP 13) have been refined to require applicants to demonstrate the contribution the proposed development will make towards supporting investment in developing, maintaining or improving new or existing plant and equipment, and/or enabling Worcestershire's productive capacity for silica sand for industrial uses to be maintained or enhanced. This is considered to accord with the increased emphasis afforded to these aspects in the revised National Planning Policy Framework (July 2018).</p> <p>In response to the Third Stage Consultation, there was significant support for the inclusion of the policy to enable the supply of building stone. This policy (MLP 14) has been retained with only a slight change to the style of wording.</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
	Coal: Although the background document refers to a BGS opinion that Worcestershire is "unlikely to attract any further opencast interest", it would be useful to confirm whether this is also the case for deep mines, given the historic precedent for such workings in the north of the county	a far more restrictive stance for coal extraction than is the case for other minerals, to reflect national policy. The policy makes provision for onshore oil and gas development in areas licenced by government for exploration or production, although evidence suggests that no such areas are likely to come forward during the plan period. SA recommendations: None included.	There was little response to the Third Stage Consultation in relation the supply of other locally and nationally important industrial minerals, although there was some support for enabling the supply of salt. This policy (MLP 15) has been retained with only a slight change to the style of wording. The policy relating to the supply of energy minerals (policy MLP 16) has been amended to more closely reflect the revised National Planning Policy Framework (July 2018).

7. Evolution of the Development Management policies

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
The First Stage Consultation did not include specific policies, but rather set out the broad issues that should be considered when developing such policies in the next stages of the plan. It listed three overarching issues that could guide future policies: •The environment (including habitats, species, landscape, archaeology, historic environment, surface and ground water); •Transport (including site access and methods for transporting materials including road, rail, water, conveyors and pipelines); and •Impacts on those nearby (including noise, dust, vibrations, visual impacts). SA recommendations:	The Second Stage Consultation did not include specific policy wording, instead setting out detailed issues to be addressed through policy criteria in relation to: <ul style="list-style-type: none"> • how mineral will be worked (with detailed issues under the following headings - sustainable supply of mineral resources; impacts on health, amenity and Worcestershire's key economic sectors; transport; sustainable design and operation; natural and historic environment; open and effective engagement) • where minerals will be worked (with detailed issues under the following headings - sustainable transport; climate change; natural and historic environment; other issues) 	The Third Stage Consultation developed the issues set out in the Second Stage Consultation into proposed policy wording. All but one of these policies can be traced back to the issues set out in the Second Stage Consultation (Policy MLP26 on Sustainable Development Delivery). The policies take into account and address all of the issues raised in the Initial SA Report. Planning Obligations: Policy MLP26 on Sustainable Development Delivery sets out the circumstances for requiring developer contributions. The plan states the reason for the new policy as being that, due to the nature and scale of minerals	The policies in the Fourth Stage Consultation maintain the direction set in the Third Stage, with some changes to specific wording to address issues raised in consultation responses, to reflect changes in national policy, or to ensure consistency in the style of wording throughout the plan. The most significant changes are outlined below. Part of the previous "Sustainable Design Principles" policy has been moved to form part of policy MLP 3 (Green Infrastructure) in the Spatial Strategy chapter. Other parts of the previous policy now form part of policy MLP 17 "Prudent Use of Resources". There is no longer a policy point requiring cumulative impacts to be addressed, rather the reasoned justification for each relevant policy refers to cumulative

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
<p>None included.</p>	<ul style="list-style-type: none"> • how mineral workings will be restored (with detailed issues under the following headings - impacts on health, amenity and Worcestershire's key economic sectors; climate change; sustainable transport; natural and historic environment; open and effective engagement; other issues). <p>SA recommendations:</p> <p>The Initial SA Report did not consider any reasonable alternatives to the policy issues, as they were too broad at this stage to allow for a meaningful appraisal. Responses to the consultation also raised concerns that the issues were too broad at this stage to assess whether they would adequately address protection and mitigation concerns.</p> <p>However, the Initial SA Report provided a broad commentary on the emerging policy direction, and found that, if addressed appropriately, the issues identified would help to ensure negative sustainability impacts were minimised during operational phases of mineral workings and that where possible, net benefits were secured for the economy, environment, and communities.</p> <p>The Initial SA Report noted that visual intrusion should recognise impacts</p>	<p>development, "it may be necessary to use planning obligations to ensure delivery of key elements of infrastructure and/or long term net gain to the environment or local communities".</p> <p>Green Belt:</p> <p>Although the Initial SA Report felt there was value in recognising green belt as an issue to be developed into policy, this was not carried forward into the Third Stage Consultation because it was considered that Green Belt policy is set at the national level and sufficient information is provided in the National Planning Policy Framework, Planning Practice Guidance, and the City, Borough and District Local Plans within Worcestershire.</p> <p>SA recommendations:</p> <p>The SA Environmental Report stated that the policies in the Third Stage Consultation take into account and address all of the SA issues raised in the Initial SA Report. In particular, the plan now places far greater emphasis on the benefits of green infrastructure and securing gains from development that contribute to landscape-scale improvements.</p> <p>Planning obligations: The value of the planning obligations policy was questioned in the SA Environmental Report. It stated that the policy does</p>	<p>impacts as part of what technical assessments will need to address. There is no longer a policy point requiring development not to give rise to unacceptable hazards as the issues this policy point was intended to cover are now either managed elsewhere in the plan, are covered by other legislation, or are no longer considered sufficient to warrant policy coverage in the MLP:</p> <ul style="list-style-type: none"> • Land stability - is now covered by policy MLP 19 (Amenity) • Aviation safety - Annex 3 of the The Town and Country Planning (Safeguarded Aerodromes, Technical Sites and Military Explosives Storage Areas) Direction 2002¹¹ sets out the list of aerodromes which need to be safeguarded. Based on the distance thresholds for safeguarding these, only one is relevant to Worcestershire (Birmingham airport) and this does not coincide with any of the Strategic Corridors. It was therefore considered that it is not necessary for the plan to include reference to aviation safety. • Other hazards / impact on utilities - safety requirements apply through other legislation regardless of planning policy and therefore should not be duplicated.

¹¹ <https://www.gov.uk/government/publications/safeguarding-aerodromes-technical-sites-and-military-explosives-storage-areas/the-town-and-country-planning-safeguarded-aerodromes-technical-sites-and-military-explosives-storage-areas-direction-2002#annex-3-officially-safeguarded-civil-aerodromes>.

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	<p>arising from transport (access roads, etc.) and associated infrastructure, as well as those impacts more directly related to sites. It found the overriding emphasis to be on 'conserving' assets, rather than 'enhancing' them as part of a GI network, and considered that a more positive approach would be beneficial. Indeed, it stated that "While the individual components of green infrastructure are covered, the holistic consideration of GI, including its role as a positive enabler, could be strengthened". It noted that consideration should be given to biodiversity offsetting. The Initial SA Report noted the Second Consultation Draft's recognition of the Green Belt as an issue to be considered, and felt it should help to maintain Worcestershire's local character and distinctiveness. The Initial SA Report stated that the archaeology issues should include a focus on significance, and that the MLP should recognise the potential for restored sites to host renewable energy and to play a role in water storage. The Initial SA Report felt that the potential cumulative effects of multiple HGV movements were not fully set out. It also noted that community engagement should be more than simply "encouraged" if levels of participation envisaged in the respective SA objective were to be achieved.</p>	<p>provide useful information on the potential requirements for planning obligations arising from minerals development, but not having a planning obligations policy was considered unlikely to have significant negative sustainability effects. On balance, it concluded that this policy should be retained.</p> <p>Green belt: It suggested that including a Green Belt policy would strengthen the recognition that Green Belt can be an important consideration for some aspects of minerals development, and the Green Belt does extend into three of the plan's strategic corridors.</p> <p>The SA Environmental Report stated that the development management policies do not include specific thresholds, such as distances from sensitive receptors, decibel measures of noisy activities, or particulate levels from dusty operations. They adopt a more nuanced approach, and place the onus on developers to demonstrate that their proposals do not cause unacceptable harm, and contribute to improvements to Worcestershire's economy, society, and environment. This approach recognises that all sites, locations, and receptors are different, and a 'one size fits all' approach can fail to recognise specific local sensitivities. However, the following reasonable alternative was identified:</p> <ul style="list-style-type: none"> • Use a 'buffer' or threshold approach to protect sensitive receptors <p>Buffers or thresholds could be based on various measurable parameters covering, for example, distance, sound, light, air</p>	<p>As well as addressing water and energy efficiency, Policy MLP 17 "Prudent Use of Resources" strengthens requirements to balance the need for mineral resources with the need to achieve final landforms and restoration that delivers multifunctional benefits. It has been developed to balance the benefits of maximising mineral extraction with the need to design developments in a way which will deliver green infrastructure priorities, provide an appropriate landform for beneficial after-use, deliver high quality restoration at the earliest opportunity, protect and enhance inherent landscape character, and manage or mitigate impacts on the built, historic, natural and water environment and amenity. It requires the appropriateness and availability of fill materials to be considered, and recognises that in some cases the sterilisation of some of the mineral resource may be necessary in order to balance all these requirements. These concepts were referred to in the Third Stage Consultation but consultation responses highlighted that they needed to be strengthened in order to ensure high quality development and restoration would be delivered.</p> <p>A policy on Green Belt has been included in the Fourth Stage Consultation to address the SA recommendations and concerns raised in consultation responses. It closely reflects national green belt policy, but provides an opportunity for the reasoned justification to expand on how this</p>

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		<p>pollution, etc. In broad terms, the benefits of this approach would be greater certainty for developers and communities over which areas may be more or less likely to be developed. Employing buffer zones is a recognised and accepted practice in decision-making when looking at many issues of relevance to guide minerals development and, indeed, it has been used to inform some of judgements in this SA. It can, however, be a crude approach that fails to take account of circumstances specific to each site.</p>	<p>applies to mineral development in Worcestershire.</p> <p>The previous policy on agriculture and soils has been split into two policies, MLP 24 "Soils" and MLP 25 "Best and Most Versatile Agricultural Land", to ensure that it was clear that all soil resources should be protected, not only those on high quality agricultural land.</p> <p>The previous policy on the water environment has been split into two policies, MLP 27 "Water Quality and Quantity" and MLP 28 "Flooding", to aid clarity around each issue.</p> <p>The previous two transport policies (transport to and from site, and transport within mineral sites) have been combined into a single policy, MLP 29 "Transport", as the majority of issues relating to transport within sites (such as impacts on amenity or landscape) were considered to be sufficiently covered by other policies.</p> <p>In relation to the SA Environmental Report's discussion of whether the development management policies should include specific thresholds or buffer distances, the Fourth Stage Consultation does not do so. It was considered that in most cases these are a relatively crude approach that fails to take account of circumstances specific to each site and which could therefore result in unacceptable impacts if thresholds/distances are too low, or lead to unnecessary sterilisation of viable resources if thresholds/distances are</p>

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			unnecessarily high. The development management policies have been developed to be outcome focused, requiring applications to include sufficient technical assessment so that the issues can be understood in the context of each specific application and appropriate design and mitigation measures incorporated to ensure that unacceptable impacts will be avoided.

8. Evolution of Safeguarding Mineral Resources and Supporting Infrastructure policies

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
<p>The First Stage Consultation recognised that there would be a need for safeguarding of mineral resources, stating that "The Minerals Local Plan needs to ... include policies to "safeguard" mineral resources so that we can still get to them and use them when we need them in years to come". Beyond this, however, no indication was provided on the policy approach to achieving such safeguarding, and no specific questions on this issue were included in the consultation.</p> <p>SA recommendations: None included.</p>	<p>The Second Stage Consultation considered safeguarding in more detail. It recognised that safeguarding was a requirement of national policy, and although it did not propose specific policy, it did set out how the issues would be approached in the next stage(s). It established that the intended policy framework would:</p> <ul style="list-style-type: none"> • Identify mineral resources of local and national importance and use these to define Mineral Safeguarding Areas (MSA); • Develop policies to protect Mineral Safeguarding Areas from needless sterilisation; • Set out the circumstances when non-mineral development in Mineral Safeguarding Areas might be appropriate; and • Identify other appropriate mineral infrastructure that should be safeguarded, setting out how this should be done. 	<p>The Third Stage Consultation addressed the points raised in the Initial SA Report, as well as others made during the consultation.</p> <p>The approach to building stone has been amended following consultation responses and the Initial SA Report's concern that the Strategic Stone Study from English Heritage [now Historic England] needed to be informed by local evidence. The Third Stage Consultation used former quarries identified in the Herefordshire and Worcestershire Earth Heritage Trust's project A Thousand Years of Building with Stone.</p> <p>The approach to clay also accorded with the Initial SA's findings; the Third Stage Consultation narrowed down the safeguarded areas to those identified by industry, because safeguarding the entire resource, without better information over likely viable areas, would place an undue burden on development and would</p>	<p>Exemptions from safeguarding requirements:</p> <p>The exemptions proposed in the Third Stage Consultation were broadly supported. However, one consultee suggested that rural exception sites should be included in the list of exempt developments to ensure they remain viable. This was considered, but has been discounted as it could have a significant effect on sterilising mineral resources or supporting infrastructure. It was considered that the implications of this type of development will need to be considered on a case-by-case basis. Decision makers will then be able to weigh the benefits of developing such rural exception sites against the impacts on mineral resources and supporting infrastructure.</p> <p>Safeguarding mineral resources:</p>

First Stage Consultation	Second Stage Consultation	Third Stage Consultation	Fourth Stage Consultation
	<p>The Second Stage Consultation stated that there are several alternatives which could be used to identify Mineral Safeguarding Areas and that it may be appropriate to use a different approach for different mineral resources. It set out the proposed approach for each mineral type as follows:</p> <ul style="list-style-type: none"> • Building stone: Base MSAs on quarries in the English Heritage [now Historic England] Strategic Stone Study. • Clay: two alternatives were suggested: <ul style="list-style-type: none"> • A) to base MSAs on all Mercia Mudstone in the county. • B) not to identify any clay resources for safeguarding, because we don't know which particular sub-groups of Mercia Mudstone are more important than others. <p>Option A was the option promoted in the Second Stage Consultation, "as it would enable the council to require further information and thereby ensure that the importance of the resource is adequately assessed. Although this has benefits for ensuring the long-term supply of mineral resources it might place</p>	<p>perform poorly in sustainability terms – particularly against economic objectives.</p> <p>The proposal to not establish MSAs for salt and brine (due to a lack of viability) or oil and gas (no evidence of any resources) was maintained. In the light of this evidence, there were not considered to be any reasonable alternatives to this approach.</p> <p>The approach to silica sand, too, has been maintained, despite the SA raising concerns that a failure to specifically safeguard the resource could see it used as a conventional aggregate, thereby potentially wasting its ability to be used for a more specific purpose. There is insufficient evidence to identify specific silica sand deposits within the wider sand and gravel MSA and, as such, there is no reasonable alternative to the approach that has been chosen.</p> <p>Coal was previously proposed as an MSA, but this was not continued in the Third Stage Consultation. This was because more up-to-date data from the Coal Authority showed there is no viable resource in the county. There is therefore no reasonable alternative to not having a coal MSA.</p> <p>The approach of the Second Stage Consultation's option (c) for aggregates safeguarding has been taken forward into</p>	<p>The approach to safeguarding mineral resources in the Fourth Stage Consultation largely continues that established in the Third Stage, but has been refined.</p> <p>In order to address consultee concerns around potential conflict with other forms of permitted and allocated development and other constraints, the refreshed <i>Analysis of Minerals Resources</i> (which takes account of environmental and amenity screening criteria as set out in background document <i>Location of development: screening and site selection methodology</i>¹²) has been used to re-define the Mineral Safeguarding Areas (MSA) for mineral resources. These screening criteria include settlement boundaries and site allocations from adopted Development Plan Documents. Mineral Consultation Areas (MCA) have been developed in a similar manner to the Third Stage Consultation, to include the area covered by the Mineral Safeguarding Areas and an additional 250m around them to ensure both direct and indirect impacts are considered. However, in the Fourth Stage Consultation they have been trimmed to remove any areas within defined settlement boundaries and sites allocated in adopted Local Plans in order to recognise that the resources in these areas are already compromised to a large extent, and that</p>

¹² Both the *Analysis of Mineral Resources in Worcestershire* and the *Location of development: screening and site selection methodology* documents are available at www.worcestershire.gov.uk/mineralsbackground.

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	<p>additional burdens on developers."</p> <ul style="list-style-type: none"> • Salt and brine: Do not have any MSAs. Salt and Brine resources in Worcestershire were not considered to be of national or local importance, or likely to be workable/commercially attractive due to ground stability/subsidence. • Silica sand: Do not have specific MSAs for silica sand, but include it as part of the provision for safeguarding solid sand deposits (see aggregates below). It was stated that an argument could be made to safeguard silica sand from working for use as an aggregate, but given the decline in the use of naturally bonded moulding sand, it was not intended to safeguard silica sand for such purposes. • Coal: Base MSAs on the Coal Authority's safeguarding areas. • Oil and Shale Gas: Do not have MSAs, as these resources were not thought to be found in the county. • Aggregates: Three alternative approaches were put forward, with no one preferred option: <ul style="list-style-type: none"> • A) Identify all aggregate resources shown on BGS mapping as MSAs • B) Identify all aggregate resources above 10 ha in size and 200m in width as MSAs • C) Identify those aggregate 	<p>the current plan, as there has been no evidence to support any alternative.</p> <p>The Third Stage Consultation largely follows the Second Stage Consultation's approach to safeguarding minerals infrastructure, although there is greater detail on the safeguarding process, and on those types of development that will be 'exempt'. A 250m extension buffer has been proposed around the Mineral Infrastructure Safeguarding Areas, to ensure that workable areas are protected, and this accords with the Initial SA Report's suggestion that "The MLP should provide further information on ... whether any or all of the Minerals Consultation Areas deriving from the safeguarded areas will include buffer zones".</p> <p>SA recommendations:</p> <p>No further recommendations or alternatives were suggested in the SA Environmental Report.</p>	<p>any new development in those areas would be unlikely to increase the risk of sterilising a mineral resource.</p> <p>The MSAs for building stone in the Fourth Stage Consultation continue to be based on former quarries identified in the Herefordshire and Worcestershire Earth Heritage Trust's project A Thousand Years of Building with Stone, but has been updated with the final dataset from the project.</p> <p>The MSAs for brick clay in the Fourth Stage Consultation continue to be those identified by industry, as no other reasonable alternatives have been identified.</p> <p>There has been no additional evidence for oil and gas, and therefore no MSAs have been identified in the Fourth Stage Consultation.</p> <p>Brine working has recommenced in the county at a small scale since the Third Stage Consultation, using a historic brine pump in the centre of Droitwich Spa. However, there continues to be little evidence of exactly where brine resources could be accessed or where they would be inhibited by surface development, given that extraction is taking place in the centre of a settlement, and therefore the Fourth Stage Consultation continues not to identify MSAs for salt and brine.</p> <p>The Fourth Stage Consultation identifies MSAs for silica sand based on the extent of the Wildmoor Sandstone</p>

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	<p>resource areas assessed to be 'key' or 'significant' in the "Analysis of Mineral Resources in Worcestershire" as MSAs. The implications of each of these options were set out.</p> <p>To ensure mineral safeguarding would not place undue burden on developers and would be practical in its application, a set of circumstances was set out where it was considered that non-mineral development could be appropriate in Minerals Safeguarding Areas, as well as a list of types of development which it was considered should be exempt from the requirements of mineral safeguarding policies.</p> <p>The Second Stage Consultation also proposed the safeguarding of mineral infrastructure. The approaches to the various types of infrastructure that could be important to the extraction, processing and movement of minerals were set out in the Second Stage Consultation as follows:</p> <ul style="list-style-type: none"> • Existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities: <ul style="list-style-type: none"> • Not to safeguard any rail or sea links to quarries as none existed in Worcestershire • To safeguarded wharfages at hub/processing sites but not to safeguard wharfages 		<p>Formation. It is still unclear which parts of this formation might contain silica sand, but it is considered that identifying this as a separate MSA will ensure sufficient consideration is given to this potential resource.</p> <p>There has been no additional evidence for coal, and therefore no MSAs have been identified in the Fourth Stage Consultation.</p> <p>For aggregates, MSAs continue to be based on the "key" and "significant" resource areas. Refreshing the <i>Analysis of Minerals Resources</i> (as outlined above) has resulted in some changes to the MSAs for sand and gravel, but significant changes for crushed rock as almost all of the crushed rock deposits are now categorised as "compromised".</p> <p>Safeguarding mineral sites and supporting infrastructure:</p> <p>Whilst the approach to safeguarding minerals sites and supporting infrastructure in the Third Stage Consultation was supported, and the broad approach has been retained in the Fourth Stage Consultation, some amendments have been made to the specific mechanism for safeguarding these assets. The Third Stage Consultation sought to identify MSA and MCA for mineral sites and supporting infrastructure, but stated that: "the number and status of sites will alter over time as planning permissions are granted, reserves are exhausted and</p>

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	<p>at "satellite sites" which have been fully worked.</p> <ul style="list-style-type: none"> • Existing, planned and potential sites for concrete batching, the manufacturing of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material: <ul style="list-style-type: none"> • As batching plant are not "County Matters", further investigation was needed into the location of these assets, but it was proposed that they would be subject to a safeguarding policy • It was proposed not to safeguard any plant for manufacturing coated materials or other concrete products, as none were known to exist in the county, but it was suggested that any subsequently permitted sites should be included subject to a safeguarding policy • It was stated that facilities for the handling, processing and distribution of recycled aggregate materials are safeguarded by policy WCS 16 in the Waste Core Strategy, and that there were no known facilities for substitute or secondary aggregate materials but it was suggested that any 		<p>sites restored, or planning permissions lapse which have not been implemented. Sites will therefore be added to the interactive minerals mapping tool available at www.worcestershire.gov.uk/minerals and designated as Mineral Infrastructure Safeguarding Areas as planning permission is granted, and the status of sites will be reviewed and updated annually as part of the <i>Annual Monitoring Report</i>."</p> <p>The Council's legal team advised that MSAs and MCAs cannot be amended outside of a formal plan review process, and therefore this was not the most appropriate mechanism for safeguarding mineral sites and supporting infrastructure. Therefore, instead of allocating MSAs and MCAs, policy MLP 32 in the Fourth Stage Consultation has been developed as a criteria-based policy which defines the types of mineral sites and supporting infrastructure which will be safeguarded.</p>

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	<p>subsequently permitted sites should be included subject to a safeguarding policy.</p> <p>SA Recommendations:</p> <p>The Initial SA Report noted that the resource areas considered unviable at the time of preparing the Second Stage Consultation, and therefore discounted from inclusion, may not necessarily be unviable in future. It found that the sustainability effects of the different approaches were difficult to predict, as the exact impacts would vary depending on the location of the resource and the type of development proposed. It recommended that there should be further information on what the safeguarding policies would mean for prospective developers, and whether any or all of the Minerals Consultation Areas deriving from the safeguarded areas would include buffer zones. It found the environmental effects uncertain, and the economic effects generally negative in the short term, preventing or inconveniencing development that could bring jobs and growth. In the longer term, however, the value of having protected resources would be felt, as future mineral supplies would continue to be available locally; if resources were sterilised by development then economic growth could be hampered. The Initial SA Report found that the social impacts could vary; important development, including housing or health facilities,</p>		

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	<p>could be compromised by safeguarding, but valuable social resources such as public rights of way or green open spaces could be safeguarded alongside the mineral deposits beneath. The Initial SA Report considered the approach to safeguarding building stone to be appropriate, provided that the Strategic Stone Study underpinning the MSAs was robust and correlated local expertise, to confirm that all relevant assets which contribute to Worcestershire's distinctiveness are identified.</p> <p>The Initial SA Report considered the proposed policy approach to safeguarding clay, and noted it was "precautionary", but would potentially hinder economic and social development in urban and rural areas, as identification as a safeguarded area could have financial and time implications on developers. It also expressed concern over the implications for mineral planning authority resources. The Initial SA Report said that, given the stated landbank of clay already available, safeguarding the entire resource may be excessive, and noted that a more refined, proportionate approach could be to remove those areas which can reasonably be judged to be technically and/or commercially unviable, or which fall within existing or proposed development land.</p> <p>The Initial SA Report suggested that the Second Stage Consultation MLP included conflicting proposals on the approach to silica sand. Whilst stating</p>		

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	<p>that it would be safeguarded through being part of wider safeguarded solid sand deposits, it also stated that it would not be safeguarded for a specific purpose. It may not be appropriate for the MLP to seek to limit safeguarding of a mineral resource based on speculation on the end-use of that resource. The NPPF identifies silica sand as a mineral of local and national importance and without clear evidence to the contrary, the arguments for not safeguarding it are unclear. It seems that the logic applied later in the MLP in relation to aggregates (that identifying large areas would "remove the risk of assumptions about the viability of resources, which may change in the future") would apply equally to silica sand. The Initial SA Report recommended that the MLP should clarify whether the silica sand within solid sand deposits can be identified as a separate resource.</p> <p>The SA found that the proposed approach of safeguarding all coal resources would be unlikely to interfere with economic and/or social development to a significant degree, due to the historic pattern of coal mining in this area, and the relative lack of significant urban areas and future development areas in the vicinity. It found that, given the lack of evidence of the existence of oil and shale gas in the county, there were no reasonable alternatives to the MLP's proposed approach of not having safeguarded areas. It suggested that not safeguarding silica sand could see it being used for conventional aggregate</p>		

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	<p>purposes, rather than for its specialised use.</p> <p>The Initial SA Report considered a further alternative in the safeguarding of aggregates – the adoption of a more onerous approach that required the extraction of resources before any development takes place. This was felt to be unreasonably onerous on developers and could potentially hinder the realisation of economic, social and environmental benefits. It would also create administrative burdens on county and district councils through unnecessary consultation and analysis.</p> <p>The SA found no major sustainability effects from the proposals for safeguarding mineral infrastructure, but did caution that failing to safeguard wharfages at "satellite sites" which have been fully worked should be carefully considered to ensure that the wharfage could not provide a more sustainable transport solution for other current or potential future minerals sites.</p>		