

# **Worcestershire Minerals Local Plan Third Stage Consultation**

## **Sustainability Appraisal Environmental Report**

**December 2016**

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## **I. NON-TECHNICAL SUMMARY**

### **I.1 Introduction**

- I.1.1 This non-technical summary has been produced to accompany the Sustainability Appraisal (SA) of the Worcestershire Minerals Local Plan Third Stage Consultation (referred to in this document as "the MLP", "the Plan", or "the draft Plan"). The purpose of this summary is to provide an accessible account of the SA process and to set out how far the MLP will enable environmental, economic and social development in Worcestershire.
- I.1.2 The Minerals Local Plan seeks to guide how and where minerals will be worked in Worcestershire. It is being developed by Worcestershire County Council to replace the current Plan, which dates from 1997. In accordance with legal requirements, a Sustainability Appraisal is being produced to accompany the MLP. The Sustainability Appraisal should help to maximise the positive impacts of the MLP and to minimise the negative impacts, through assessing how well each part of the Plan performs against a series of criteria. The SA provides recommendations for how the Plan should develop.

### **I.2 The Minerals Local Plan**

- I.2.1 Once adopted by the County Council, the Minerals Local Plan will be a Development Plan Document which will be used to determine planning applications. It establishes a vision for mineral provision and restoration in the county in the next 15 years, and proposes a series of objectives and policies for making the vision a reality.
- I.2.2 The purpose of the MLP is to address:
- a) the need for a sustainable supply of aggregates to meet identified needs to 2035 and beyond, considering:
    - the contribution of substitute, secondary and recycled materials and mineral waste to overall aggregate supply;
    - the current shortfall in the landbank of permitted reserves of sand and gravel; and
    - constraints on delivering crushed rock supply over the life of the plan.
  - b) the need for a steady and adequate supply of locally and nationally important industrial minerals, such as brick clay and silica sand;
  - c) the need for an adequate and diverse supply of building stone to maintain Worcestershire's built heritage and landscapes; and
  - d) the need to safeguard locally and nationally important mineral resources, permitted mineral sites and supporting infrastructure from needless sterilisation by other development.
- I.2.3 Plan preparation began with publication of a first-stage consultation document in November 2012. This set out the issues which need to be considered in the MLP. These issues were developed into broad policy directions in the 'Second Consultation Draft' of November 2013. The current Draft Plan builds on this and

provides policy wording and details about strategic corridors and specific locations where mineral development should be focussed. This draft plan will be amended, taking into account consultation responses and the contents of this SA Environmental Report. A final plan will be submitted to the government for examination in 2017. If the plan is approved, the County Council can formally adopt it as planning policy for Worcestershire.

I.2.4 Throughout all these stages, there have been opportunities for people to get involved and share their views. Each iteration of the MLP has been accompanied by an SA document (in the form of a Scoping Report at the earliest stage, or an SA Report at subsequent stages).

I.2.5 The MLP vision is set out below.

### **A vision for the winning, working and lasting legacy of minerals development in Worcestershire to 2035 and beyond**

The winning, working and lasting legacy of minerals development in Worcestershire will be part of a holistic approach to delivering sustainable economic growth, supporting quality of life, and enhancing the natural, built and historic environment, that together contribute to the diverse character of the county and surrounding area.

Worcestershire's permitted mineral sites and supporting infrastructure will provide a steady, adequate and sustainable supply of locally and nationally important minerals. This will contribute to identified local and national needs, making the best use of substitute, secondary and recycled minerals and mineral wastes to minimise the need for primary materials.

A seven year landbank of permitted sand and gravel reserves will have been reached by 2025 at the latest and at least this level will have been maintained thereafter.

Minerals development will have been delivered through multiple sites over the life of the plan, focused in five **strategic corridors**. Mineral sites will form an integrated part of Worcestershire's multifunctional green infrastructure network. The design, working and restoration of mineral sites will reflect the locally distinctive character of the **strategic corridors**, the site specific context and effective community engagement.

Mineral sites will make prudent use of mineral resources, balancing the need to extract as much material as possible with the need to achieve final landforms and restoration that delivers multifunctional benefits and is appropriate in the landscape. Minerals operations, transport and processing will be water and energy efficient and will mitigate and adapt to the impacts of climate change.

Worcestershire's locally and nationally important mineral resources which have not already been worked will remain available for future use, having been safeguarded against sterilisation by non-minerals development.

I.2.6 The MLP's objectives are set out below.

### **Objectives of the Worcestershire Minerals Local Plan**

1. Deliver development in accordance with the priorities of the spatial strategy.
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.
8. Promote community inclusion in mineral development from inception to after-use so that local issues are understood and addressed.
9. Ensure that minerals development contributes to the mitigation of and adaptation to climate change and makes prudent use of natural resources.
10. Ensure that mineral development protects and enhances the health, well-being, safety and amenity of people and communities in and around Worcestershire.
11. Ensure that mineral development protects and enhances the natural and historic environment and distinctive local character.
12. Ensure that mineral development protects and enhances the vitality of the local economy.
13. Optimise opportunities to integrate economic, social and environmental benefits from mineral development through the delivery of high-quality multifunctional green infrastructure throughout the life of the development.

I.2.7 The MLP contains the following policies:

- Policy MLP 1 Strategic Location of Development*
- Policy MLP 2 Avon and Carrant Brook Strategic Corridor*
- Policy MLP 3 Lower Severn Strategic Corridor*
- Policy MLP 4 North East Worcestershire Strategic Corridor*
- Policy MLP 5 North West Worcestershire Strategic Corridor*
- Policy MLP 6 Salwarpe Tributaries Strategic Corridor*
- Policy MLP 7 Contribution of Substitute, Secondary and Recycled Materials and Mineral Waste to Overall Minerals Supply*
- Policy MLP 8 Steady and Adequate Supply of Sand and Gravel*
- Policy MLP 9 Steady and Adequate Supply of Crushed Rock*
- Policy MLP 10 Steady and Adequate Supply of Brick Clay and Clay Products*
- Policy MLP 11 Steady and Adequate Supply of Silica Sand*

*Policy MLP 12 Adequate and Diverse Supply of Building Stone*  
*Policy MLP 13 Supply of Other Locally and Nationally Important Industrial Minerals*  
*Policy MLP 14 Supply of Energy Minerals*  
*Policy MLP 15 Sustainable Design Principles*  
*Policy MLP 16 Health and Quality of Life*  
*Policy MLP 17 Access and Recreation*  
*Policy MLP 18 Biodiversity*  
*Policy MLP 19 Landscape*  
*Policy MLP 20 Agriculture and Soils*  
*Policy MLP 21 Geodiversity*  
*Policy MLP 22 Water Environment*  
*Policy MLP 23 Historic Environment*  
*Policy MLP 24 Transport To and From Site*  
*Policy MLP 25 Transport Within Mineral Sites*  
*Policy MLP 26 Sustainable Development Delivery*  
*Policy MLP 27 Safeguarding Locally and Nationally Important Mineral Resources*  
*Policy MLP 28 Safeguarding Permitted Mineral Sites and Supporting Infrastructure*

- I.2.8 The MLP should be read alongside relevant European, national, regional and local policies, and is guided by international, national and local policy. It will sit alongside the Worcestershire Waste Core Strategy Local Plan and the city, borough and district Core Strategies/Local Plans.

### **I.3 Sustainability Appraisal: Background and Process**

- I.3.1 Sustainability Appraisal (SA) of the MLP is a statutory requirement under section 19(5) of the Planning and Compulsory Purchase Act 2004. SA also addresses the requirements of European Directive 2001/42/EC (known as the Strategic Environmental Assessment Directive). The appraisal is designed to ensure that the social, environmental and economic impacts arising from the plan are fully considered and that where there is the potential for negative effects, these effects are either avoided, reduced, or mitigated. Undertaking the appraisal should allow for negative impacts to be minimised and for positive impacts to be maximised, resulting in a more sustainable Minerals Local Plan. It must be recognised, however, that the level of detail may not always be sufficient to allow for a full, in-depth appraisal of likely significant effects.
- I.3.2 This non-technical summary accompanies the 'SA Environmental Report', which represents the third stage in the SA process. It is a strategic appraisal of the policies and sites proposed in the Draft MLP. This SA builds upon the earlier 'initial SA Report' and the 'SA Scoping Report' before that. The Scoping Report was amended to reflect consultation comments, providing a framework to assess the 'Second Consultation Document' MLP. This framework has since been further refined to ensure it is relevant and fit for purpose in assessing the latest Draft MLP.
- I.3.3 The sustainability objectives which underpin the SA framework are shown overleaf:

**1: Landscape**

Safeguard and strengthen landscape character and quality and minimise negative visual impact.

**2: Biodiversity and geodiversity**

Conserve and enhance Worcestershire's biodiversity and geodiversity.

**3: Cultural heritage, architecture and archaeology**

Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.

**4: Material assets**

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.

**5: Natural resources**

Protect and enhance water and air quality.

**6: 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.

**7: 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.

**8: 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.

**9: Health and amenity**

Improve the health and well-being of the population and reduce inequalities in health.

**10: Waste**

Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.

**11: Traffic and transport**

Reduce the need to travel and move towards more sustainable travel patterns.

**12: Growth with prosperity for all**

Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.

**13: 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.

**14: 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.

**15: 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.

**16: Population (skills and education)**

Raise the skills levels and qualifications of the workforce.

**17: Population (crime & fear of crime)**

Reduce crime, fear of crime and antisocial behaviour.



## 1.4 Sustainability profile of Worcestershire

1.4.1 The SA has been informed by the identification, at Scoping Report stage, of a series of significant environmental, social and economic issues for Worcestershire (including environmental 'problems' requiring identification under the SEA Directive). These issues can be summarised as:

- There are localised areas where SSSIs are in poor condition, especially in Bromsgrove district, where a majority of sites remain classified as 'unfavourable no change'. Overall, however, there has been a continual shift in Worcestershire since 2008 from 'favourable' to 'recovering' as Natural England reviews the condition of SSSIs, and this is likely to continue in the plan period.
- Although regional and national comparators are not yet known, too few local wildlife and geological sites in Worcestershire are under appropriate management, which generally means their condition is poor. The likely direction of travel for this indicator is unclear. In recent years, there have been minor improvements, due in part to the Earth Heritage Trust identifying more geodiversity sites meeting the criteria through survey work. A small number of biodiversity sites have also seen improvements from forestry and agri-environment grant schemes, but the end of schemes can also lead to decline.
- Recorded populations of breeding birds are falling, particularly in the case of the bullfinch. This situation reflects the pattern nationally, and is largely occurring as a result of agricultural practices. The decline is expected to continue unless changes in land management practices, among other intervention, can be achieved.
- Water bodies are not of good quality, and their condition is significantly worse than the overall picture in the region and in the country as a whole. Improvements are being made, however, and should see performance improve. The greatest gains are likely to arise from addressing sources of run-off from roads and fields.
- There has been an overall fall in CO<sub>2</sub> emissions per capita since 2005. These emissions are now the same as the national figure, but above the West Midlands average. Although the figures are falling, this indicator is closely linked to the performance of the economy, which remains heavily reliant on carbon-heavy energy and transport. A shift to a lower-carbon economy, including greener transport, or a fall in economic output more generally, could see emissions continue to fall.
- Per capita road transport emissions are especially high in more rural areas of the county. In Malvern Hills, Bromsgrove and Wychavon districts, these emissions are over twice the national average. The likely direction of travel of these emissions is strongly related to the issues above.
- Worcestershire has the second largest percentage land area at risk of flooding in the West Midlands (although it should be noted that, in terms of numbers of households at risk, Worcestershire is performing better than the national average). These numbers have increased in recent years, and this upward trend will require concerted efforts to reverse. The Worcestershire Local Flood

Risk Management Strategy was adopted in March 2016 and may help to secure improvements in this indicator.

- Air quality in some areas of the county is improving, but in others is decreasing. The number of Air Quality Management Areas in Worcestershire is increasing, and may continue to do so if less polluting vehicles are not adopted, and if development takes place in locations that encourage polluting transport.
- The rate of new business enterprises in Worcestershire has fluctuated since 2009, and no clear direction of travel can be predicted.
- Worcestershire's GVA per resident head is below both the England and West Midlands levels, but Nominal Gross Value Added increased 17% from 2008-2013, and only Oxford (23%) and London (18%) Local Enterprise Partnerships have seen faster growth. It is unclear if this level of growth will continue into the plan period.
- County housing affordability is far worse than the regional average. The mean house price in the county was largely flat during and immediately after the recession, but has seen a 7.9% increase between 2013 and 2014. Future trajectories may depend on wider economic health and rates of housebuilding.
- Worcestershire is slightly under-performing against the regional and national averages in the percentage of young people achieving a level 2 qualification by the age of 19. The future trajectory of this indicator is unclear.

#### I.4.3 There are two Special Areas of Conservation in Worcestershire:

- Lyppard Grange Ponds SAC  
The qualifying feature of this site is its Great Crested Newt population.
- Bredon Hill SAC  
The qualifying feature of this site is its Violet Click Beetle population

Conservation objectives are in place to ensure that these sites remain in the necessary condition for SAC status.

#### I.4.4 These issues, together with those identified through a review of plans, policies and programmes relevant to the MLP (and any other issues which emerged through complementary research) have informed the 'SA framework' set out in the SA Scoping Report, and subsequently revised as appropriate. The main part of the framework is a set of 17 SA objectives which are used to judge how far each part of the MLP provides for each identified element of sustainable development in Worcestershire.

#### I.4.5 A review of European, national, regional and local plans, policies, and programmes was carried out as part of the Scoping Report. This identified the key implications for the SA and the MLP. The key points emerging from the document review that the MLP may be able to positively influence (either directly or indirectly) are outlined below:

## **Social**

- Enabling communities to participate in and contribute to the issues that affect them.
- Addressing health inequalities.

## **Environmental**

- Increasing the use of renewable energy: 10% of the UK electricity should come from renewable energy sources by 2010 and 20% by 2020.
- Encouraging and promoting land use activities which will lead to an improvement in the quality of natural resources.
- Development should be informed by, and sympathetic to, the landscape character of the locality.
- Protection of the county's natural and cultural heritage.

## **Economic**

- Ensuring prudent and efficient use of natural resources.
- Ensuring the efficient transportation of freight within the county, to support a strong economy, but ensuring the environmental impacts are minimised.
- Enabling wider development, through ensuring minerals requirements can be met as far as possible from within Worcestershire. Viability and deliverability of development could be threatened if minerals have to be imported over longer distances.

1.4.6 All of the MLP's proposed approaches and policies have been appraised. Where the MLP has not put forward alternatives, the SA has sought to identify reasonable alternatives, including a comparison with a 'business as usual' approach; this means comparing the impacts of the proposed MLP to the impacts likely to arise under a continuation of the current Minerals Local Plan from 1997.

## **1.5 Short, medium and long-term effects**

1.5.1 Many of the effects of the MLP could differ over the short, medium and long term. Safeguarding policies could have short-term negative effects on those SA objectives furthered by development taking place (especially growth with prosperity for all, and provision of housing), as safeguarding could delay or even prevent such development occurring. Over the longer term however, the protection of resources could eventually help to facilitate such development and so have a positive impact on these SA objectives. Some negative environmental effects, especially on the SA objectives for landscape, biodiversity and geodiversity, and cultural heritage, architecture and archaeology, are likely to arise in the short term from mineral workings. In the longer term, however, sensitive restoration is likely to lead to positive effects, as sites are restored to their former condition (or restored to exceed their former environmental value through achieving net gain).

## I.6 Initial SA findings

- I.6.1 This section summarises the main identified sustainability findings resulting from the more detailed appraisal in the main report and appendices.
- I.6.2 Overall, the MLP provides a sustainable approach to minerals development, but there are some improvements which could be made to improve sustainability performance.
- I.6.3 The SA indicates that the proposed policy directions in the MLP perform well against the SA objectives. The green infrastructure-led restoration approach means that the MLP scores particularly well in relation to landscape, biodiversity, geodiversity, cultural heritage, architecture and archaeology; material assets; and natural resources. As the approach is driven primarily by environmental concerns, the economic and social benefits and impacts of minerals development could be under-optimised.
- I.6.4 The MLP is weighted such that the benefits of minerals development (typically the enhancement of the natural environment as a result of green-infrastructure-led restoration) will arise either after, or – in the case of phased working/restoration – during minerals extraction. The MLP's overall spatial strategy is to focus development on those areas where the greatest long-term green infrastructure gains can be achieved through site restoration. This will lead to positive sustainability effects - especially but not exclusively on environmental objectives - in the longer term. Some negative effects in the short/medium-term, however, will inevitably arise; minerals extraction and processing is, by its nature, a process that can be noisy, with landscape and visual impacts, significant movements of heavy goods vehicles, and impacts on the natural and built environment.
- I.6.5 The SA has also considered alternatives to the MLP's proposed policies, where these exist. Many alternatives are discussed that are not 'reasonable' for technical or policy reasons. They are:
- **Focus strategic corridors where green infrastructure is in poor condition**  
This alternative would wholly fail to provide for the supply of minerals where and when they are needed. As such, it has been discounted.
  - **Basing strategic corridors on Biodiversity Delivery Areas (BDAs)**  
BDAs are useful tools in identifying areas/opportunities for action from partners but would not reflect minerals potential. As such, this is not considered a reasonable alternative.
  - **Base strategic corridors on flood catchments**  
Flood catchments are too wide, and therefore the GI issues are too varied. This means that effective prioritisation would be difficult, joined-up benefits would be less likely to be realised, and delivery of the Vision and objectives would be unlikely. This is therefore not a reasonable alternative.
  - **Do not allocate specific sites or preferred areas**  
Not allocating specific sites or preferred options is not a reasonable alternative, as government guidance is clear that "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): 1.designating Specific Sites ... 2.designating Preferred Areas ... 3.designating Areas of Search".

- **Seek to reach a 10 year landbank of crushed rock as soon as possible**  
This is not considered a reasonable alternative as crushed rock production is unlikely to exceed 0 tonnes per annum; the MLP should not set a landbank target that is not practically achievable.

I.6.6 Some alternatives to the MLP's proposed policies were found to be 'reasonable' in SA terms, and were subject to more in-depth appraisal. These relate to the Spatial Strategy and are:

- **A different number of and/or size of strategic corridor**
- **Basing strategic corridors on Environmental Character Areas**
- **Alternative specific sites and/or preferred areas**
- **Use a 'buffer' or threshold approach to protect sensitive receptors**

The appraisal found that the MLP's proposed approach generally performs well when compared to these alternatives, but that greater detail is needed to clarify some approaches taken in the spatial strategy and the identification of specific corridors. Some reasonable alternatives could also offer sustainability benefits to Worcestershire, but there is no overriding justification for recommending these over the proposed LNP approach at present, and there is a degree of uncertainty in the appraisal of reasonable alternatives that means definitive conclusions may not be possible in the absence of further detail.

I.6.6 Subsequent stages of the SA will seek to update these conclusions if and when more information becomes available, and SA supplements may be produced if required, in advance of the final SA statement.

I.6.7 Where the SA has identified potential negative effects (or where minor positive effects could be extended), mitigation measures have been recommended. These relate to the broad spatial policies, the development management policies, and the specific sites and preferred areas. Mitigation measures recommended include:

- Avoiding working specific areas of sites to reduce the risk to sensitive receptors;
- Avoiding working during certain hours, days, and times of the year;
- The use of screening to mitigate landscape and visual impact (but with caution that the screening does not itself compromise SA objectives);
- Providing compensatory habitat for biodiversity;
- Retaining exposed geology for future educational or tourism benefit;
- Recording archaeological deposits prior to minerals extraction;
- Avoiding the Green Belt if development would compromise its purposes;
- Avoiding best and most versatile agricultural land if this could not be restored to equivalent quality post-extraction;
- Adopting stringent policies and site practices to protect and enhance water quality;
- Ensuring that HGVs do not use inappropriate roads and avoid AQMAs where possible;
- Ensuring effective site management practices such as wheel washing and netting of HGVs;

- Reducing energy requirements through efficiencies;
- Sourcing site and transport energy requirements from renewable sources;
- Increasing flood storage as part of site restoration; and
- Use of quieter vehicles.

## 1.7 Difficulties encountered

### ➤ Lack of detail

1.7.1 The MLP sets the overall approach to development, and is not intended to provide detailed information on exactly how each site will be operated. As such, the SA tends to draw 'broad-brush' conclusions, and many of the impacts of the MLP will not be known until more detail is available. The MLP is a *strategic* document, and the nature of SA is to identify *significant* effects. More detailed appraisal regimes, such as the standard planning application process, and Environmental Impact Assessment, also have a valuable role to play in ensuring that development is sustainable.

### ➤ Lack of alternatives

1.7.2 In order to identify the most sustainable approach for the MLP, the SA would ideally compare the relative sustainability performance of a range of alternatives. Where the MLP proposes alternatives, these have been appraised, but where this is not the case the SA has sought to draw conclusions based on any other reasonable alternatives as well as the comparison (stated or implicit) of that alternative against a business-as-usual 'baseline'. More information on reasonable alternatives, and how they have been considered throughout the preparation of the MLP, is provided in section 6.

## 1.8 Monitoring

1.8.1 The sustainability impacts arising from implementation of the MLP will primarily be monitored through a series of existing monitoring regimes, including the Minerals and Waste Local Development Framework Annual Monitoring Report. Other agencies, including the Environment Agency, also have a role to play in monitoring various issues related to the plan, such as compliance of minerals sites with environmental permits and regulations.

1.8.2 The SA process includes specific monitoring indicators, set out in the SA Scoping Report, that help to identify sustainability impacts. These are sometimes more general than the dedicated minerals indicators set out in the MLP, and help to build a fuller picture of sustainability in Worcestershire. These indicators are drawn from a wide range of datasets, including the Worcestershire Local Nature Partnership's annual State of the Environment Report, district council Annual Monitoring Reports, and data produced by the Office for National Statistics and government departments. Some of the SA indicators may have less direct relevance to the MLP than others, but they can help to identify social, environmental and economic trends that, if not necessarily caused by the MLP, could nevertheless be affected by changes in MLP policy and approach.

- I.8.3 This SA does not recommend the introduction of any additional monitoring beyond that described above, as this may not be deliverable without additional resources and would be likely to duplicate existing regimes. Future SA work - in particular new or revised Scoping Reports - will update the SA evidence base to ensure that up-to-date indicators and sustainability issues continue to be reflected. Amendments to the SA framework are not anticipated, because the framework has been designed to take account of all relevant issues that may arise, but changes will be considered if supported by evidence.

## **I.9 Next Steps**

- I.9.1 Following the current consultation on the draft MLP, responses to the plan and to the SA will be considered and the MLP will be revised into a submission document. The MLP will be submitted for examination in 2017, and should be adopted later that year. Upon adoption, an SA statement will be produced to explain the difference that the SA process has made.

## 2. THE MINERALS LOCAL PLAN AND SA: BACKGROUND

### 2.1 The role of the Minerals Local Plan

- 2.1.1 Worcestershire County Council (WCC) is producing a new Minerals Local Plan (the "emerging plan") to replace the existing plan dating from 1997 (the "current plan"). The plan sets out the level of mineral resources required in the county, how and where minerals development will be delivered, and how it will be ensured that mineral resources are not sterilised by other development. Once adopted, the plan will be a Development Plan Document which will be used to determine planning applications.
- 2.1.2 The plan is the Third Stage Consultation Worcestershire Minerals Local Plan (referred to in this document as "the MLP", "the Plan", or "the draft Plan"). It is being developed in co-operation with partner organisations and seeks to reflect and complement other plans, including district-level Core Strategies/Local Plans. It directs development to broad areas known as 'strategic corridors' and to specific site allocations and preferred areas of extraction. It identifies the restoration priorities within the strategic corridors and sets criteria-based policies to allow proposals to be assessed against relevant considerations, enabling a steady supply of minerals whilst safeguarding Worcestershire's environment and communities.
- 2.1.3 A wide range of legislation, policy and guidance informs the MLP. The National Planning Policy Framework states that "*minerals are essential to support sustainable economic growth and our quality of life*" (paragraph 142). The MLP will ensure that sufficient mineral resources are available in the right locations and at the right time to enable this sustainable growth, whilst protecting the environment and quality of life.
- 2.1.4 Minerals planning policy in Worcestershire plays a vital role in ensuring there are sufficient minerals for our needs now and in the future. The MLP sets guidelines for the quantity of minerals that should come from Worcestershire until 2035 and beyond. It must also balance the need for minerals and the benefits sites can bring against the likely impact of their development. To do this, the MLP includes policies to make sure that development happens in the right places, in the right way, and with appropriate restoration once mineral operations are complete.
- 2.1.5 Once adopted, the MLP will be used by the County Council to make decisions about planning applications for mineral extraction and processing in the county. It may also be relevant in the decision-making of the city, borough and district councils in Worcestershire, as well as surrounding authorities.



**2.2 Outline of the Minerals Local Plan**

2.2.1 It is anticipated that the following minerals requirements will be needed and planned for:

**Table 1: Anticipated minerals requirements to 2030**

| <b>Aggregates</b>          |   |
|----------------------------|---|
| Sand and gravel            | 16.254-16.304 million tonnes                                      |
| Crushed rock               | No target (resource too constrained)                              |
| <b>Industrial Minerals</b> |   |
| Silica sand                | No specific target (part of overall sand and gravel supply)       |
| Clay                       | No target (MLP suggests there are already sufficient permissions) |
| Salt and brine             | No target (MLP suggests resources are not viable)                 |
| Building stone             | No target   |
| <b>Energy Minerals</b>     |   |
| Coal and hydrocarbons      | No target (MLP suggests resources are not viable)                 |

2.2.2 The MLP includes a spatial strategy to guide where minerals development should take place. This is based on working viable resources in areas where there is the greatest ability to achieve green infrastructure restoration priorities. The MLP includes:

- A key diagram, directing development to strategic corridors.
- Site allocations and preferred areas for minerals development, showing where extraction is considered appropriate, subject to other policies being met.
- Criteria-based policies to assess the suitability of proposals.
- Minerals safeguarding policies to ensure mineral resources are not sterilised by other development.

2.2.3 The MLP encourages the use of recycled minerals and includes policies to safeguard mineral resources to ensure they remain available when needed in years to come.

2.2.4 The MLP seeks to protect Worcestershire's environment (including habitats, species, landscape, archaeology, historic environment, surface and ground water) and to minimise adverse effects from minerals operations on those nearby (including impacts from noise and dust, vibrations, and visual impacts).

2.2.5 A suite of background documents sets out the evidence upon which the Minerals Local Plan is based and identifies key matters which the plan must take into account. These are technical documents (resource assessments, methodologies,

legislative information, maps, etc.) to help inform the policy direction of the MLP. Their preparation and review is on-going as the plan develops. The suite of documents is available at [www.worcestershire.gov.uk/mineralsbackground](http://www.worcestershire.gov.uk/mineralsbackground).

2.2.6 The Minerals Local Plan has nine sections, as well as appendices/annexes. These are:

|  |
|--|
| 1. Introduction  |
| 2. Portrait of Worcestershire  |
| 3. Vision and objectives   |
| 4. Key diagram   |
| 5. Spatial Strategy: location of mineral development   |
| 6. Steady and adequate supply of mineral resources   |
| 7. Development management  |
| 8. Safeguarding minerals and supporting infrastructure   |
| 9. Implementation and monitoring framework   |
| Appendix 1: Superseded policies  |
| Appendix 2: Information about specific sites and preferred areas   |
| Appendix 3: Definition of the strategic corridor boundaries  |
| Appendix 4: Glossary   |
| Annex 1: Sites and corridors which have not been included in the Third Stage Consultation draft of the Minerals Local Plan |

## 2.3 The need for Sustainability Appraisal

2.3.1 Sustainability Appraisal (SA) of the emerging plan is a statutory requirement under section 19(5) of the Planning and Compulsory Purchase Act 2004. The appraisal allows the social, environmental and economic effects of the plan to be fully considered. The SA process is designed to make sure that plans take sustainability considerations into account, and that where there is the potential for negative effects, these effects are avoided, reduced, or mitigated. Undertaking the appraisal should allow for negative effects to be minimised and for positive effects to be maximised, resulting in a more sustainable Minerals Local Plan.

2.3.2 This SA Environmental Report represents the third stage in the Sustainability Appraisal (SA) process, building upon the earlier SA Scoping Report and SA Report on the 'Second Stage Consultation' MLP. This report is a high-level appraisal of the policies proposed in the draft MLP.

2.3.3 As part of the SA, the requirements of European Directive 2001/42/EC on the Assessment of the Effects of Certain Plans and Programmes on the Environment (known as the Strategic Environmental Assessment or SEA Directive) must be addressed. The objective of the SEA Directive is:

***“To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development.”***

(Article 1, European Directive 2001/42/EC)

2.3.4 The SEA requirements within the Directive have been transposed in the UK through the Environmental Assessment of Plans and Programmes Regulations, 2004<sup>1</sup>. These environmental requirements, if addressed with sufficient rigour, can be considered alongside the assessment of economic and social considerations through a single SA process. In line with Government guidance, the SEA has therefore been combined with the SA, and subsequent reference to SA also includes SEA. As part of a quality assurance process, a checklist is included in Appendix I signposting where the SEA requirements are addressed within the SA process.

## 2.4 Related assessments

### Habitats Regulations Assessment

- 2.4.1 Directive 92/43/EEC (the Habitats Directive) on the 'Conservation of Natural Habitats and of Wild Fauna and Flora' requires a Habitats Regulations Assessment (known as Appropriate Assessment or 'AA') to be undertaken, when necessary, in preparing a project or plan.
- 2.4.2 Appropriate Assessment should ensure that as part of the planning process, land use plans protect the integrity of European 'Natura 2000' sites (Special Protection Areas (SPAs), Special Areas of Conservation (SACs), and sites on draft lists for protection). The DCLG guidance, 'Planning for the Protection of European Sites: Appropriate Assessment' (2006) makes clear that "AA and SA are two separate processes each with their own legal requirements" and that "SA and AA outputs must be clearly distinguishable and reported on separately".
- 2.4.3 A Habitats Regulation Assessment (HRA) Record of Assessment - Consultation Draft has been produced to support the Third Stage consultation MLP. This states that a HRA Screening Report was produced alongside the Initial SA Report, which identified potential effects of mineral working and highlighted potential in-combination effects with other plans and policies on selected SACs. Mitigation measures were recommended with the intention of the Plan avoiding, cancelling or reducing any foreseeable risks of adverse impact upon European sites.
- 2.4.4 Natural England agreed with the general breadth, detail and recommendations of the Scoping Assessment and confirmed that the mitigation and best practice approaches set out within the HRA Scoping Assessment were considered to be adequate.
- 2.4.5 In the MLP's Third Stage Consultation, a spatial strategy and a suite of draft development management policies have emerged which, together, demonstrate

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<sup>1</sup> The Environmental Assessment of Plans and Programmes Regulations 2004, SI 2004/1633

compliance with the best practice and mitigation measures as recommended and endorsed by consultees.

### **Strategic Flood Risk Assessment**

- 2.4.6 A report on 'Surface and Ground Water Protection Issues, including Flood Risk Assessment of Submitted Sites' has been prepared to support the MLP. This report "outlines the positive and negative effects and focuses on the links between them and minerals, mostly sand and gravel, working. It identifies the policy issues that need to be developed in the Worcestershire Minerals Local Plan (WMLP) to enable positive effects on the water environment to be maximised and negative effects minimised".
- 2.4.7 It also states that "The assessments made in this report are based on evidence from the SFRAs completed to date in the County, the Worcestershire Local Flood Risk Management Strategy and Worcestershire Surface Water Management Plan, the Environment Agency Flood Risk Maps and assessments of the quality and quantity of surface and groundwaters in the county. The Council considers that they are enough to identify the broad issues that need to be considered to inform the policies, the priorities for the Strategic Corridors and the potential allocation of specific sites in the "Third Consultation" for the Minerals Local Plan".

### **Equality Impact Assessment**

- 2.4.8 An 'Equality Impact Relevance Screening' has been carried out to identify whether a full Equality Impact Assessment (EqIA) is required for the MLP. This screening concluded that EqIA is not required at this stage.

### **Health Impact Assessment**

- 2.4.9 The above EqIA screening stated that "High level impacts on health from the emerging local plan will be identified and assessed through the HIA process which will take place as part of the third stage consultation, and mitigation proposed. HIA will also be undertaken on a site by site basis as part of the planning application process".

## 3. THE SUSTAINABILITY APPRAISAL PROCESS SO FAR

### 3.1 The SA Scoping Report

3.1.1 The SA process began with a Scoping Report, produced at the earliest evidence-gathering stage of MLP plan-making. The Scoping Report established the sustainability issues of importance for Worcestershire upon which the MLP could have an influence. These issues help to define specific objectives to use when appraising the performance of the draft plan. Sustainability appraisal guidance advocates a balance of environmental, social and economic objectives. Within this context, the selection of objectives has derived from a combination of the following considerations, all of which are based on the best information available at the time:

- Review of the issues of relevance to Worcestershire as described within plans, policies and programmes;
- Review of sustainability characteristics and issues; and
- Analysis of baseline data.

3.1.2 Plans, policies, and programmes at the European, national, regional and local level were considered, although it was assumed that national and European plans had been incorporated into the content and strategic direction of regional and locally-based documents. Only European and national documents of greatest relevance to the emerging plan and to sustainability were reviewed. The purpose of the review was not to highlight every detail from every document, but to identify the key implications for the SA. The date of publication/period of validity, key objectives/targets, and potential implications for the Minerals Local Plan were recorded for each document reviewed. As the review is a dynamic process, revisions have been made as new documents have emerged or have been revised, and as new plans are adopted.

3.1.3 The key points emerging from the document review that the Minerals Local Plan may be able to positively influence (either directly or indirectly) are outlined below:

#### **Social**

- Enabling communities to participate in and contribute to the issues that affect them.
- Addressing health inequalities.

#### **Environmental**

- Increasing the use of renewable energy: 10% of the UK electricity should come from renewable energy sources by 2010 and 20% by 2020.
- Encouraging and promoting land use activities which will lead to an improvement in the quality of natural resources.

- Development should be informed by, and sympathetic to, the landscape character of the locality.
- Protection of the county's natural and cultural heritage.

### **Economic**

- Ensuring prudent and efficient use of natural resources.
- Ensuring the efficient transportation of freight within the county, to support a strong economy, but ensuring the environmental impacts are minimised.
- Enabling wider development, through ensuring minerals requirements can be met as far as possible from within Worcestershire. Viability and deliverability of development could be threatened if minerals have to be imported over longer distances.

3.1.4 The above points were then expanded upon through a consideration of baseline data. Baseline data plays a fundamental role throughout the appraisal, providing the evidence base from which to predict and monitor the effects of the MLP. In particular, the SEA Directive requires that "*the relevant aspects of the current state of the environment and likely evolution thereof without implementation of the plan*" be considered. The Directive also requires a summary of "*any existing environmental problems*", especially those relating to European sites. These issues are set out in full in the Scoping Report, but can be summarised as:

- There are localised areas where SSSIs are in poor condition, especially in Bromsgrove district, where a majority of sites remain classified as 'unfavourable no change'.
- Although regional and national comparators are not yet known, too few local wildlife and geological sites in Worcestershire are under appropriate management, which generally means their condition is poor.
- Recorded populations of breeding birds are falling, particularly in the case of the bullfinch. This situation reflects the pattern nationally, and is largely occurring as a result of agricultural practices.
- Water bodies are not of good quality, and they may fail to reach Water Framework Directive standards. Their condition is significantly worse than the overall picture in the region and in the country as a whole.
- There has been an overall fall in CO<sub>2</sub> emissions per capita since 2005. These emissions are now the same as the national figure, but above the West Midlands average.
- Per capita road transport emissions are especially high in more rural areas of the county. In Malvern Hills, Bromsgrove and Wychavon districts, these emissions are over twice the national average.
- Worcestershire has the second largest percentage land area at risk of flooding in the West Midlands (although it should be noted that, in terms of numbers of

households at risk, Worcestershire is performing better than the national average).

- Air quality in some areas of the county is improving, but in others is decreasing. The number of Air Quality Management Areas in Worcestershire is increasing.

3.1.5 Alongside identification of environmental problems required by the SEA Directive, a series of additional social and economic problems have emerged, which can be summarised as follows:

- The rate of new business enterprises in Worcestershire has fallen by 10.1% from 2007-2008, which is a greater fall than regionally or nationally.
- Worcestershire's GVA per resident head is below both England and the West Midlands, and evidence suggests the gap is widening.
- County housing affordability is far worse than the regional average.
- Worcestershire is slightly under-performing against the regional and national averages in the percentage of young people achieving a level 2 qualification by the age of 19.

3.1.6 These issues, together with those identified through the review of plans, policies and programmes (and any other issues which emerged through complementary research) informed the 'SA framework' proposed in the Scoping Report.

3.1.7 The SA Framework is at the heart of the Sustainability Appraisal process. Through the development of a set of objectives and decision-making criteria, the framework provides the means through which sustainability effects of the emerging plan can be described, analysed and compared. The SA objectives are critical in assessing the potential sustainability effects of the plan and in prompting consideration of alternative approaches.

3.1.8 The approach proposed in the Scoping Report was consulted on alongside the 'First Stage Consultation' on the MLP from October 2012 to January 2013. The draft Scoping Report was also made available on Worcestershire County Council's website as part of a suite of consultation documents. Responses to the draft Scoping Report were received from each of the statutory agencies (English Heritage [now Historic England], the Environment Agency, and Natural England). No responses to the draft Scoping Report were received from developers, the public, or any other party. The statutory agencies provided constructive feedback on how the proposed approach could better reflect sustainability issues. This included signposting to additional plans, policies and programmes which should be reviewed, and suggesting amendments and additions to the proposed SA framework to allow a more nuanced consideration of particular issues.

- 3.1.9 The following tables summarise those comments made during the consultation that suggested changes to the SA Scoping Report. The tables also set out how these comments were taken into consideration in developing the SA framework.

### Natural England

| Summary of comments  | Action taken   |
|--|--|
| 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. |

### English Heritage

| Summary of comments  | Action taken  |
|--|---|
| 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   | Agreed. Both documents are included within the Scoping Report's document review.  |



|  |  |
|--|--|
| plans, policies, and programmes.   |  |
| 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 landscape character assessment.  | The condition of the landscape is a specific indicator within the county's 'State of 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  | Having heritage assets covered in issue  |

|  |   |
|--|---|
| included in Issue 4 (material assets).   | 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

| Summary of comments   | Action taken   |
|---|--|
| 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 required. |

3.1.10 The SA Scoping Report is available on the MLP background documents web page here: <http://www.worcestershire.gov.uk/background>

## 3.2 Developing the SA Framework

3.2.2 Following amendments made as a result of consultation feedback, the Scoping Report established the SA framework in 2013. Further minor amendments have been made as the SA process has developed, and there have been opportunities for comment on the SA during all stages of MLP consultation.

3.2.3 Several changes have been made to the SA framework since the previous SA consultation (the 'Initial SA Report' accompanying the MLP Second Stage Consultation). These changes are intended to simplify the process and avoid repetition and irrelevant content. The changes are:

- The SA objective on 'Landscape' as set out in the Scoping Report referred only to "*landscape character and quality*", but a modification has been made to the SA objective so that visual impact is also now recognised.
- The term 'biodiversity' includes all species of animals and plants. As such, the 'Biodiversity and geodiversity' SA objective has been amended to remove the former reference to "*flora and fauna*", which is superfluous.
- The SA objective on 'Natural resources' has been changed from "*Protect and enhance water, soil and air quality*" to "*Protect and enhance water and air quality*". This is because soil quality is already considered under the 'Material assets' objective, and to include it twice could lead to duplication or, at worst, contradictions in the appraisal.
- There was duplication between the 'Climate change' and 'Energy' objectives. These two objectives have therefore been combined into a single overall 'Climate change and energy' objective.
- The 'Health' objective has been revised to become 'Health and amenity', as many issues, such as increases in noise or visual intrusion, may not have a measureable impact on physical or mental health but can still affect a person's quality of life. As such, they are valid social/environmental considerations within the SA.

3.2.4 Alongside these changes, it is recognised that there are some parts of the SA that are less relevant than others, and many parts of the MLP will have little or no effects on some of the SA objectives. These parts of the SA are nevertheless worth maintaining.

3.2.5 The final SA framework, setting out the SA objectives for each sustainability issue, is provided overleaf. The potential relationship between minerals development and each of the objectives is discussed in section 4, below.

**1: Landscape**

Safeguard and strengthen landscape character and quality and minimise negative visual impact.

**2: Biodiversity and geodiversity**

Conserve and enhance Worcestershire's biodiversity and geodiversity.

**3: Cultural heritage, architecture and archaeology**

Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.

**4: Material assets**

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.

**5: Natural resources**

Protect and enhance water and air quality.

**6: 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.

**7: 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.

**8: 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.

**9: Health and amenity**

Improve the health and well-being of the population and reduce inequalities in health.

**10: Waste**

Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.

**11: Traffic and transport**

Reduce the need to travel and move towards more sustainable travel patterns.

**12: Growth with prosperity for all**

Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.

**13: 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.

**14: 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.

**15: 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.

**16: Population (skills and education)**

Raise the skills levels and qualifications of the workforce.

**17: Population (crime & fear of crime)**

Reduce crime, fear of crime and antisocial behaviour.

## 4. METHODOLOGY

### 4.1 Structure of the SA and links to the MLP

4.1.1 A variety of guidance has been used to inform the preparation of this Sustainability Appraisal, including the *Practical Guide to Strategic Environment Assessment Directive*<sup>2</sup> and the Planning Advisory Service's *Principles of plan making*<sup>3</sup>. The guidance provides a structure for the SA and divides the process into distinct elements, which are then further broken down into specific tasks (see Figure 1, below). This SA report falls under stages B and C of the process: 'Developing and refining options and assessing effects'; and 'Preparing the sustainability appraisal report'.

### 4.2 Timetable

4.2.1 The SA process is specifically scheduled to co-ordinate with the production of the emerging plan. This is to ensure that the SA plays a valid role, and to ensure there are opportunities for its findings to influence the plan. Any recommendations identified in the SA will, where possible, be reflected in the plan to ensure that it contributes to the aims of sustainable development.

4.2.2 This SA Environmental Report has been produced to accompany the Draft Minerals Local Plan. This version of the MLP sets out a proposed approach for how and where minerals should be worked and how the greatest restoration benefits can be realised. The MLP is being consulted upon alongside this SA Environmental Report and the responses to the consultation will help to inform the submission version of the MLP. The current programme for MLP preparation is as follows:

#### Minerals Local Plan and SA co-ordination

| What?                    | When?                   | SA Stage                         |
|--------------------------|-------------------------|----------------------------------|
| First stage consultation | autumn 2012/winter 2013 | SA Scoping Report                |
| Draft policy framework   | autumn 2013             | Initial SA Report                |
| Draft MLP                | autumn/winter 2016      | <b>This Environmental Report</b> |
| Submission               | TBC                     | SA Report Update                 |
| Adoption                 | TBC                     | SA Statement                     |
| Monitoring & review      | ongoing                 | SA monitoring                    |

<sup>2</sup> Office of the Deputy Prime Minister (2005) *Practical Guide to Strategic Environment Assessment Directive: Practical guidance on applying European Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment"*

<sup>3</sup> <http://www.pas.gov.uk/principles-of-plan-making>

- 4.2.3 Although the process has a series of separate stages, the actual undertaking of SA leads to continuous review and refinement as further baseline information is obtained and as more sustainable issues and options are identified.

### Figure I: The SA Process

#### **Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope**

A1: Identifying other relevant policies, plans and programmes, and sustainable development objectives

A2: Collecting baseline information

A3: Identifying sustainability issues and problems

A4: Developing the SA Framework

A5: Consulting on the scope of the SA

#### **Stage B: Developing and refining options and assessing effects**

B1: Testing the plan objectives against the SA framework

B2: Developing the plan

B3: Predicting the effects of the draft plan

B4: Evaluating the effects of the draft plan

B5: Considering ways of mitigating adverse effects and maximising beneficial effects

B6: Proposing measures to monitor the significant effects of implementing the plan

#### **Stage C: Preparing the Sustainability Appraisal Report**

C1: Preparing SA Report

#### **Stage D: Consulting on draft Minerals Local Plan and Sustainability Appraisal Report**

D1: Public participation on the SA Report and the draft Minerals Local Plan

D2: Assessing significant changes

#### **Stage E: Monitoring the significant effects of implementing the Minerals Local Plan**

E1: Finalising aims and methods for monitoring

E2: Responding to adverse effects

### 4.3 How the objectives have been applied to the MLP

- 4.3.1 The SA framework sets the approach that has been used to test the sustainability of the MLP in this Environmental Report. The framework includes objectives covering the MLP's social, environmental and economic effects. The approach proposed in the MLP has been appraised to determine how far it satisfies each objective, and this process highlights particular problems and opportunities for each specific issue, to build a picture of the overall sustainability of the MLP.
- 4.3.2 This SA has sought to test all the main components of the MLP - including the policies, strategic corridors, sites, preferred areas, and approach to monitoring - but has not considered the more 'contextual' sections (such as the Spatial Portrait) in detail. Where appropriate, this SA provides observations or recommendations on the contextual sections of the Plan, but they have not been scrutinised to the same degree as the more substantive elements.
- 4.3.3 Due to the breadth of issues included within the SA, the emerging plan will only have limited scope to influence some of the objectives. In some cases (for example the appraisal of sites) those SA objectives which clearly have no significant relationship to the plan have been omitted to avoid the unnecessary rehearsal of irrelevant material. Where this is the case, this has been recorded.
- 4.3.4 Where appropriate, matrices have been used to provide a transparent appraisal of the performance of each element of the MLP against the objectives.
- 4.3.5 The following sections highlight some of the important relationships between minerals development and the SA objectives:

#### **SA Objective I: Landscape**

- 4.3.6 The SA objective on landscape is to "*Safeguard and strengthen landscape character and quality and minimise negative visual impact*".
- 4.3.7 The likely effects on the landscape from minerals development will depend on the scale and nature of the development and how it relates to the landscape and receptors during and after operations. Landscape character is strategic in scale and may, depending on scale and circumstance, be unaffected by localised, one-off, site-specific changes. Indeed, WCC states that "*Character assessment is ... in the first instant, a strategic decision support tool and becomes less relevant as the scale of the area in question declines*". More localised visual impact can, however, be significant, depending on the impact(s) and receptor(s).
- 4.3.8 The nature of minerals extraction means that the topography within and around sites will almost certainly change during operational periods and once sites are restored. As part of planning applications for mineral sites, applicants should provide sufficient information for the planning authority to understand the likely landscape and visual impacts of a scheme during working and restoration periods. A Landscape and Visual Impact Assessment (LVIA) should provide an assessment of likely significant landscape effects. WCC states<sup>4</sup> that an LVIA will be required for "*all development proposals that, due*

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<sup>4</sup> Worcestershire County Council (2015) Planning Validation Document: update

to their scale or location, are likely to have significant visual impacts. A Landscape and Visual Impact Assessment will also likely be required for proposals within or visible from an Area of Outstanding Natural Beauty". In the case of quarrying proposals, the requirement for Environmental Impact Assessment<sup>5</sup> will lead to the submission of an LVIA as part of the Environmental Statement accompanying a planning application<sup>6</sup>.

- 4.3.9 Mitigation of negative effects may be possible, to either reduce the effect altogether, or else to ameliorate it to an acceptable degree. SA recommendations can include limiting workings or certain types of operation to specific areas within a wider site boundary, or requirements for screening. It is important, however, that any screening to mitigate landscape and visual impact does not itself compromise this SA objective; earth bunds and tree belts can become permanent additions to the landscape and, while this may be appropriate in some circumstances, it may not be in others. The SA would therefore recommend, where appropriate, a commitment to management of trees, and possibly removal of bunds as part of restoration.

## **SA Objective 2: Biodiversity and Geodiversity**

- 4.3.10 This objective is to "*Conserve and enhance Worcestershire's biodiversity and geodiversity*".

### Biodiversity

- 4.3.11 Minerals sites can have profound effects on biodiversity, as they can involve large-scale alteration of habitats over long periods. In the short term, during development and operations, effects on biodiversity may be negative, unless compensatory habitat is provided to mitigate loss. In the longer term, as sites are restored (either in phases, or all at once), there may be opportunities to not only reinstate lost habitats, but to secure net gains for biodiversity. The exact impact will depend on the nature of the minerals site and the presence of receptors.

- 4.3.12 Mitigation may be required for some operations, which can include avoiding workings during certain times of the year, and the provision of compensatory habitat.

### Geodiversity

- 4.3.13 Geodiversity is "*the variety of rocks, fossils, minerals, natural processes, landforms and soils that underlie and determine the character of our landscape and environment*"<sup>7</sup>.

- 4.3.14 Minerals development can present challenges and opportunities for geodiversity. Extraction can reveal geology that may not otherwise be exposed, offering new opportunities for education, but can also destroy valuable geodiversity resources.

- 4.3.15 Recommended mitigation measures may include the retention of exposed geology for future educational or tourism benefit, or the avoidance of operational activities in the vicinity of known geodiversity assets.

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<sup>5</sup> Quarries are listed among other extractive industries in Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011.

<sup>6</sup> Schedule 4 of the EIA Regulations lists landscape as one of the aspects of the environment which must be considered in the Environmental Statement, and the Landscape Institute states, in its 'Guidelines for landscape and visual impact assessment, third edition consultation draft', section 1.6, that "*as a core part of the EIA process LVIA is also formally required*".

<sup>7</sup> UK Geodiversity Action Plan definition.



### **SA Objective 3: Cultural heritage, architecture and archaeology**

- 4.3.16 This SA objective is to *"Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness"*.
- 4.3.17 As with geodiversity, Worcestershire's cultural heritage, architecture and archaeology could be compromised and/or enhanced by minerals development, depending on the circumstances. The historic environment is a finite resource, and minerals development has the potential to physically damage or destroy it, if operations occur in an inappropriate location or are carried out in an inappropriate manner. The importance of setting to the historic environment also needs to be taken into account, as it may be that minerals development could fundamentally alter the characteristics that contribute to the special character of an historic environment asset.
- 4.3.18 The most obvious interaction between minerals and the historic environment is in aggregates extraction along rivers. Because much of Worcestershire's sand and gravel resource lies along river corridors, it often coincides with evidence of previous habitation. A report of a 2007 project, *Archaeology and Aggregates in Worcestershire: a resource assessment and research agenda*<sup>8</sup> notes that the Avon Valley and Carrant Brook corridors *"have been prime foci of archaeological fieldwork and research since the 1970s, due to a constant demand for sand and gravel and the near-ubiquitous presence of archaeological remains"*. It can be inferred that this ubiquity will be found elsewhere alongside the county's other rivers and tributaries, as *"The archaeological resource of the Stour is less well known while that of the Teme is poorly understood, due in part to the absence of development-led fieldwork including that driven by sand and gravel extraction"*. This highlights the benefits that minerals extraction can bring in furthering our understanding of the historic environment; without minerals extraction, many archaeological sites and finds may never be discovered and recorded. The report notes that the nature of archaeological remains in such circumstances - buried under thick alluvial layers - often means that conventional non-invasive techniques used to help their identification, such as geophysics, fieldwalking and cropmark analysis, are often rendered ineffective. As such, minerals workings may provide the only realistic opportunity to identify important archaeological remains.
- 4.3.19 Mitigation of negative effects may be possible, and best practice approaches are well-established in the industry. The MLP's overall approach to GI-led restoration, while not focussing specifically on the historic environment, can nevertheless make a valuable contribution. Distinctive, well-preserved landscapes are often commensurate with preserved historic assets and biodiversity opportunities.
- 4.3.20 Where some degree of risk to the historic environment is identified, it does not usually mean that minerals development cannot go ahead. The 2007 project notes that *"A range of mitigation strategies or outcomes may be recommended by the Archaeological Planning Officer. In rare instances no archaeological constraints will be placed upon the application. Similarly rarely, it is possible that it will be recommended that planning permission be refused on archaeological grounds. More commonly it might be recommended that an area of significant deposits is taken out of the application area or most commonly some form of mitigation strategy to record archaeological deposits prior to extraction will be recommended."*

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<sup>8</sup> Worcestershire County Council and Cotswold Archaeology (November 2007) *Archaeology and Aggregates in Worcestershire: a resource assessment and research agenda*.

*The proper fulfilment of the recommended mitigation strategy will then form a planning condition placed upon the application".<sup>9</sup>*

#### **SA Objective 4: Material assets**

- 4.3.21 This SA objective is to *"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"*.
- 4.3.22 The geology that underpins mineral resources also plays a major factor in determining the location of 'best and most versatile' agricultural land. As such, many mineral resources will be located beneath high-quality, productive farmland. Even where the land is not of the highest quality, it can still make contribution to agricultural production, and its loss to minerals development needs to be carefully considered. During minerals operations, at least part of a site will be unavailable for agriculture at any one time, and it is not until site restoration that full agricultural use may return. Because the minerals under the surface help to determine the land above, merely backfilling an area of mineral extraction with a different material to re-build the landform may not return the land to pre-development quality. Much will depend on the material used to fill the void and the final surface, and the agreed approach to restoration. As is seen later in this SA, a GI-led approach to restoration can have both positive and negative effects on agriculture. If a site is planned to be restored to farmland through a comprehensive plan, this could have beneficial effects. If, however, the land has been identified for, say, recreation provision, this could prevent the land from returning to agriculture and lead to a net loss in available productive capacity.
- 4.3.23 The relationship of minerals extraction to the Green Belt is different to many other types of development. Because minerals can only be extracted where they are found, national policy states that *"mineral extraction"* and certain other forms of development are *"not inappropriate in Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in Green Belt"*<sup>10</sup>. It is too simplistic to suggest that the Green Belt has no bearing on minerals development, as some parts of a minerals development may not constitute "mineral extraction", and all parts may or may not be inappropriate depending on the specific circumstances.
- 4.3.24 That element of the SA objective that is concerned with safeguarding mineral reserves does have relevance to the MLP, as the volume and location of extracted materials should ideally, from a sustainability perspective, closely match the level and location of need, subject to minerals being of the right quality and accessibility. If the plan overall, or specific sites/preferred areas proposed the delivery of 'excessive' quantities of minerals relative to need, this could give rise to unsustainable transport movements, as material is exported to markets outside the county.
- 4.3.25 Mitigation measures for this objective may include avoiding the Green Belt if development would compromise its purposes, and avoiding best and most versatile agricultural land if this could not be restored to equivalent quality post-extraction. Mitigation could also include ensuring that agriculture forms part of the development

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<sup>9</sup> Worcestershire County Council and Cotswold Archaeology (November 2007) Archaeology and Aggregates in Worcestershire: a resource assessment and research agenda, Mitigation Strategies.

<sup>10</sup> Department for Communities and Local Government (2012) National Planning Policy Framework, paragraph 90.

management policies and GI-led restoration proposals across the plan and for specific sites, preferred areas, and strategic corridors.

### **SA Objective 5: Natural resources**

4.3.26 This SA objective is to *"Protect and enhance water and air quality"*.

#### Water quality

4.3.27 Minerals extraction can affect water quality in a number of ways, including through run-off and discharges from extraction and processing operations. Excavation can alter the water table and could potentially, if not carefully controlled, affect aquifers. The locations of many aggregates sites means there is often little distance between mineral workings and rivers, which could risk any harmful run-off making its way to a river. Minerals development can also have positive effects on water quality, especially through GI-led restoration proposals, by working with natural processes to filter pollutants.

4.3.28 Mitigation of potential negative effects on water quality could include avoiding development within certain locations, and adopting stringent policies to ensure that full account is taken of the need to protect and enhance water quality at application stage.

#### Air quality

4.3.29 Minerals development has the potential to negatively affect air quality through the emission of dust and from plant and vehicle fumes. It could also potentially remove trees and vegetation that act as air pollution filters, in order to facilitate development.

4.3.30 This SA objective also raises issues that are considered under the 'Health and amenity' objective, as dust and fumes can negatively affect people's health and amenity.

4.3.31 Mitigation of negative effects on air quality could be achieved through reducing the extent or operating times of mineral development, and ensuring that HGVs do not use inappropriate roads and avoid AQMAs where possible. Specific site management practices such as wheel washing and netting of HGVs has been proven to reduce the generation of dust, and all such measures should be fully considered and conditioned at planning application stage, where appropriate.

### **SA Objective 6: Climate change and energy**

4.3.32 This SA objective is to *"Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources"*.

4.3.33 A research report on the climate change impacts on minerals extraction and other industries<sup>11</sup> found that *"Improving extraction methods and increasing recycling rates can address the depletion of certain materials, including those used in mitigation technologies"*. The MLP has a key role to play in not only facilitating the extraction of minerals, but also in

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<sup>11</sup> University of Cambridge Institute for Sustainability Leadership/BSR (June 2014) Climate Change: Implications for Extractive and Primary Industries Key Findings from the Intergovernmental Panel on Climate Change Fifth Assessment Report

preventing any more extraction than is necessary to meet identified requirements. This means that the MLP should seek to maximise the use of secondary and recycled materials, which not only prevents needless depletion of Worcestershire's resources, but also avoids many of the climate change impacts that can arise through extraction and processing (although secondary resources can also require significant energy and other inputs that can also exacerbate climate change). The report also highlights the issue – often overlooked – of the need for sufficient materials to be produced to enable a shift to a low-carbon economy, and to build the physical infrastructure needed to tackle climate change. It is not the MLP's role to dictate how materials should be used, and some may well be used for purposes that contribute to climate change; but many will also be needed to help us to mitigate and adapt to climate change. This also links to the SA objective on technology, innovation, and inward investment.

- 4.3.34 The negative effects of mineral extraction on climate change tend to arise as result of using energy-intensive equipment and transport, as well as the release of stored carbon from soil disturbance, and the loss of trees and plants as part of development. The spatial element of the MLP can help to reduce these effects by guiding minerals development to locations that minimise transport movements. The development management policies can seek to ensure that working methods reduce carbon emissions. The restoration elements can recognise the role that GI-led restoration can play in mitigating and adapting to climate change. Former mineral sites can often make a valuable contribution to reducing carbon through effective planting, and can also provide resources to help adapt to climate change, including recreational assets, green spaces and waterbodies to allow people to escape urban heat islands and to allow biodiversity to move and connect. The potential for former mineral sites to increase flood storage is also an important aspect of climate change adaptation, but this is covered under the SA objective on flooding.
- 4.3.35 Further mitigation can be achieved by mineral sites reducing their need for energy through exploiting lower-carbon production methods, and by sourcing more of the site and transport energy requirements from renewable sources.

### **SA Objective 7: Flooding**

- 4.3.36 This SA objective is to "*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*".
- 4.3.37 Minerals development is defined as "*water-compatible*" in national policy, and the location of a minerals proposal within a floodzone would be unlikely to be a valid reason for refusing planning permission. Not all aspects of a minerals site may be compatible, however, and key infrastructure should not be put at risk. Floodzones can play a valuable role in flood storage and slowing floodwater, and the MLP has a role to play in ensuring that any minerals sites that come forward in such areas consider how they might be able to maintain and improve flood storage capacity during and after extraction. A site that floods may require the pumping of water to remain operational, which could require the extensive use of diesel and electric plant, with resultant carbon emissions.
- 4.3.38 The MLP should be informed by the results of Strategic Flood Risk Assessments which consider these issues in greater detail.

- 4.3.39 Mitigation measures for flooding may include maximising opportunities to increase flood storage as part of site restoration, and ensuring that non flood-compatible development avoids potential flood risk both now and in the future under climate change projections.

#### **SA Objective 8: Access to services**

- 4.3.40 This SA objective is to *"Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment"*.
- 4.3.41 Although this SA objective is potentially wide-ranging, the SA has focussed primarily on access in terms of rights of way. The other issues are reflected where relevant, and some are also discussed in relation to other SA objectives. Minerals development can compromise access by blocking off routes either temporarily or permanently, due to the size of operations and the need to ensure public safety. Conversely, minerals sites can also provide opportunities to improve access as part of restoration proposals, for example by creating linked green infrastructure resources where previously there were none, or by improving the quality and/or quantity of routes in the immediate area.
- 4.3.42 As stated in the MLP's Portrait of Worcestershire, at paragraph 2.120, *"There is potential for mineral workings to reduce access to green spaces in the short term, but there is also potential for the restoration of sites to leave a positive legacy of accessible green space and improved public rights of way"*. The MLP, in setting policies for site development and restoration, can help to ensure that access is given full consideration by applicants when drawing up applications, and that decision-makers have sufficiently robust policies to prevent negative effects on access routes.

#### **SA Objective 9: Health and amenity**

- 4.3.43 This SA objective is to *"Improve the health and well-being of the population and reduce inequalities in health"*.
- 4.3.44 Minerals sites can potentially affect health and amenity in a number of ways. The nature of minerals development means that a variety of emissions are likely to arise, from noise, dust, light pollution, etc. These can occur as a result of activities on site and also from vehicle movements. While some of these may not amount to threats to health, they can nevertheless affect people's amenity. HGV movements along unsuitable roads could potentially have a health and safety implication.
- 4.3.45 As with any built development, minerals sites must take into account the nature of their surroundings, including any areas that need to be protected to avoid safety risks. Consultation zones around hazardous installations have been established by the Health and Safety Executive. Schedule 5 of the Town and Country Planning (Development Management Procedure) (England) Order 2010 requires consultation with the HSE when certain types of development are proposed within these zones. Most of these development types are not relevant to minerals extraction (being residential accommodation and varying sizes of retail, office, or industrial floor space), but it also includes development *"which is otherwise likely to result in a material increase in the number of persons working within or visiting the notified area"*. Minerals sites could potentially qualify

as such development and, in any case, it is considered good practice to consult the HSE where a proposed minerals site falls within a HSE consultation zone.

- 4.3.46 Minerals sites, especially during and after restoration, can lead to the creation of water bodies that attract birds, potentially creating a risk of bird strike to aircraft. Consideration should be given to the potential for impacts on those airports/airfields within 13km of a minerals site.
- 4.3.47 Mitigation measures for health and amenity may include limiting the size or operating hours of sites, and requiring vehicles to avoid potentially unsafe routes, such as narrow lanes with limited visibility. Specific on-site measures to mitigate negative effects may include noise bunds and dust suppression technology. The restoration approach guided by the MLP can also allow minerals development to make a positive contribution to health and amenity by providing green infrastructure.

### **SA Objective 10: Waste**

- 4.3.48 This SA objective is to "*Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal*".
- 4.3.49 The British Geological Survey (et al)<sup>12</sup> found that for the UK's estimated annual production of 82.4 million tonnes of sand and gravel, 9.2 million tonnes of quarry waste and 20.6 million tonnes of quarry fines were generated. The MLP has a role to play in seeking to reduce waste generation. Avoiding the need for extraction can help to reduce associated waste. Making better use of existing resources (some of which may themselves be considered 'waste') as alternatives to new extraction can not only preserve Worcestershire's limited minerals resources, but can also help to avoid the negative effects associated with primary minerals development, including waste generation and carbon emissions. This SA objective therefore has close links to the objective on climate change.
- 4.3.50 The overburden covering mineral resources may itself be waste, but restoration proposals can often offer the opportunity for such wastes to contribute to backfill and the shaping of the final landform.
- 4.3.51 The spatial distribution of minerals sites has the potential to affect waste management. If a minerals site were to be developed too close to a waste site, one or both could be compromised. To ensure that Worcestershire has sufficient capacity to manage its waste now and in the future, certain waste sites are safeguarded, to ensure that inappropriate development does not compromise their ability to play a part in the waste hierarchy. This safeguarding is provided by the Waste Core Strategy, but the SA should nevertheless seek to identify any potential effects from minerals development on existing or potential future waste sites.

### **SA Objective 11: Traffic and transport**

- 4.3.52 This SA objective is to "*Reduce the need to travel and move towards more sustainable travel patterns*".

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<sup>12</sup> Goodquarry.com (British Geological Survey, et al). (2007) Quarry Fines and Waste

- 4.3.53 While the number of trips generated by employees and visitors to minerals sites may be relatively small, the movement of extracted material will require significant trips by heavy goods vehicles, if alternative transportation is unavailable or unviable. The nature of river terrace sand and gravel resources means that many sites are close to waterways, but whether or not water-borne transport is available will depend on a range of factors. Access to the waterway, volume of material being moved, and the location of navigable and non-navigable stretches of water will all influence the use of water-borne transport. The MLP's Portrait of Worcestershire states that *"There are no handling and processing facilities for the bulk transport of minerals by rail, sea or inland waterway in Worcestershire and no planned or potential sites have been identified"*.
- 4.3.54 If alternative transport modes are unlikely, the most sustainable option for minerals sites may therefore be to make best use of the strategic highway network. Sites that are accessible to motorways and main roads can avoid the need for lengthy journeys along unsuitable roads to reach markets. This can also help to avoid health and amenity impacts, by reducing the number of HGVs passing housing and other sensitive receptors. Sites that are so remote that they are very distant from intended markets are unlikely in Worcestershire, and the transport aim should be to ensure as small a distance as possible.
- 4.3.55 The MLP can help to mitigate the negative effects of transport by encouraging greater use of alternative methods both on and off site, including conveyors and pipelines. These alternatives will need to be considered carefully to ensure they represent a better alternative to conventional diesel vehicles.

### **SA Objective 12: Growth with prosperity for all**

- 4.3.56 This SA objective is to *"Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural"*.
- 4.3.57 Minerals are crucial to growth and infrastructure. Minerals development allows the economic value of Worcestershire's natural resources to be maximised. The minerals industry can support local employment, including in rural areas where other employment opportunities may be limited. Development also allows other construction to take place; without a sufficient supply of the right minerals, the buildings, roads, flood defences and other infrastructure needed to support the local economy could not be built. Even if certain minerals are worth relatively little, they can still make an important contribution to facilitating development.
- 4.3.58 Negative effects from minerals development on growth and infrastructure are also possible if the location of minerals sites prevents or hinders other types of economic development.

### **SA Objective 13: Provision of housing**

- 4.3.59 This SA objective is to *"Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments"*.
- 4.3.60 There is a direct relationship between the provision of minerals and the delivery of housing. As more sustainable construction methods become better established, it may be that housing relies less and less on traditional 'bricks and mortar', and so the importance of minerals sites to the county's housing provision may reduce. Nevertheless, it is difficult to imagine that Worcestershire's mineral resources will not remain an important component of delivering housing throughout the plan period and beyond. Minerals will also remain crucial for delivery of all the associated infrastructure which helps to ensure housing is developed in clean, safe and pleasant local environments.
- 4.3.61 A lack of available minerals of the right type at the right time could potentially compromise delivery of housing, or else make it more expensive and time-consuming to build. The MLP has a key role to play in ensuring that sufficient quantities of minerals are identified for extraction.
- 4.3.62 The delivery of housing could also be compromised if minerals development takes place too close to potential housing sites.

### **SA Objective 14: Participation by all**

- 4.3.63 This SA objective is to *"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"*.
- 4.3.64 Minerals developments are often large scale and last many years, and can generate significant interest from local communities. The MLP has the opportunity to support public engagement in the planning of minerals development, and local people can make a valuable contribution to shaping minerals sites and their restoration.

### **SA Objective 15: Technology, innovation and inward investment**

- 4.3.65 This SA objective is to *"Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives"*.
- 4.3.66 Minerals development is essential to new technologies. Without minerals, key parts of the low-carbon economy could not be delivered. Renewable energy installations, for example, require 'conventional ' minerals for ballast, buildings, and associated infrastructure, even though they may also include rarer elements.
- 4.3.67 Minerals sites themselves can also provide an opportunity to exploit innovation. More efficient technologies could be employed in the excavation, processing, and movement of minerals, including lower-energy plant and vehicles. It is highly likely that more efficient technologies will emerge within the plan period, and minerals sites that exploit these



advances could benefit from reduced energy bills whilst also lowering carbon emissions. This objective therefore has close links with the SA objective on climate change.

### **SA Objective 16: Population (skills and education)**

- 4.3.68 This SA objective is to "*Raise the skills levels and qualifications of the workforce*".
- 4.3.69 Minerals sites have the potential to offer employment and training in a wide range of roles, but the ability of the MLP to influence skills and education is limited.

### **SA Objective 17: Population (crime & fear of crime)**

- 4.3.70 This SA objective is to "*Reduce crime, fear of crime and antisocial behaviour*".
- 4.3.71 No significant linkages have been identified between minerals development and this SA objective.

## **4.4 Reasonable alternatives**

- 4.4.1 The proposed approach put forward in the MLP has been tested by considering how each proposed policy approach could affect the SA objectives set out above. Some of the approaches will have a major impact, while others may be totally irrelevant, or of such a small scale as to produce no meaningful effects. To identify the most sustainable approach, the SA considers the proposed policies set out in the plan alongside other alternatives put forward as part of plan preparation, or proposed separately through this SA. This comparison of alternatives is an essential part of the SA process; where no clear alternatives are set out in the plan, the SA is free to propose them. Government guidance<sup>13</sup> states that "*Only reasonable, realistic and relevant alternatives need to be put forward*". As such, the appraisal has avoided considering alternatives which would clearly not happen for technical, political or other reasons (a proposal which is clearly contrary to national policy would not be considered acceptable). More information on alternatives is provided in section 6.

## **4.5 The appraisal matrices**

- 4.5.1 The detailed appraisal itself is recorded, where relevant, through a series of matrices which use symbols to identify the likely effects of each proposed approach (and any further alternatives) on each SA objective. This allows the performance of each proposed policy approach to be easily understood and highlights any approaches that are particularly beneficial or damaging in SA terms.

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<sup>13</sup> A Practical Guide to the SEA Directive, Appendix 6 (2005)

### Symbols and colours used in the SA matrices

|                             |    |                             |    |
|-----------------------------|----|-----------------------------|----|
| Minor positive impact       | +  | Unknown impact              | ?  |
| Significant positive impact | ++ | Minor negative impact       | -  |
| No impact                   | 0  | Significant negative impact | -- |

4.5.2 A significant positive impact against an SA objective does not imply that the MLP approach is the best it can be. The role of this SA is to identify opportunities to optimise the environmental, social and economic performance of the MLP, and it is therefore possible to award a very positive rating where further improvement is still possible (or, conversely, a very poor rating where some elements of an SA objective are fully met, but others are seriously lacking).

#### 4.6 How strategic corridors, specific sites, and preferred areas have been appraised

4.6.1 The SA of sites involves appraising the likely impacts on the environment, economy and society. This includes the identification of clearly-defined assets/receptors (such as listed buildings or sites of special scientific interest) which may be affected, as well as consideration of the wider social, economic and environmental impacts. This means that, alongside quantitative data and 'lines on maps', there is also a need for qualitative appraisal to enable a cohesive view. An example of this wider approach is illustrated through the move in recent years towards green infrastructure, recognising that it is the networks of all spaces, rather than specific individual points, that ensures a robust environment.

4.6.2 The appraisal involved an initial professional judgement, supported by discussions with experts in relevant fields (landscape, biodiversity, historic environment, etc.) where appropriate.

4.6.3 In the detailed appraisal matrices of locations, objectives 14-18 are omitted, as they are largely non-applicable. Where there are predicted to be some effects on these objectives as result of the locations, these are very unlikely to be significant, but have been recorded for completeness.

4.6.4 Brief commentaries on how the appraisal has approached each of the objectives are set out below, together with indicative thresholds used as decision-making criteria to appraise each of the specific sites, preferred areas, and their alternatives. While these can inform the appraisal, the thresholds are not exhaustive and cannot capture all possible issues that will affect a site's performance against the objectives.

## Landscape

- 4.6.5 The SA identifies which landscape type(s)<sup>14</sup> and land cover parcel(s)<sup>15</sup> each proposed site falls within, and uses the 'landscape type profiles'<sup>16</sup> 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.
- 4.6.6 The SA identifies, through GIS searches, any landscape designations that could be affected by the development of the proposed site. 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. Landscape designations in this context are Areas of Outstanding Natural Beauty (AONBs), nationally-registered parks and gardens, and unregistered historic parks and gardens of local importance.
- 4.6.7 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. For specific sites/preferred areas, 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.
- 4.6.8 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...                     | SA rating |
|---|-----------|
| Be within or very close to an AONB  | --        |
| Be within or very close to a nationally-registered historic park and garden   |           |
| Be within a locally-important historic park and garden                        |           |
| Have significant visual impact on large numbers of sensitive receptors        |           |
| Be incompatible with all or most of the site's landscape type characteristics |           |
| Be close to a locally-important park and garden                               | -         |
| Have negative visual impacts on one or more sensitive receptors               |           |
| Be incompatible with one or more of the site's landscape type characteristics |           |
| Have no impact on landscape and/or visual impact                              | 0         |
| Slightly improve the setting of an AONB or registered landscape               | +         |
| Slightly improve the visual impact on sensitive receptors                     |           |
| Improve some of the site's landscape type characteristics                     |           |
| Significantly improve the setting of an AONB or registered landscape          | ++        |
| Significantly improve the visual impact on sensitive receptors                |           |
| Improve all of the site's landscape type characteristics                      |           |
| Have an unknown impact on landscape and visual impact                         | ?         |

<sup>14</sup> 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).

<sup>15</sup> 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).

<sup>16</sup> [http://www.worcestershire.gov.uk/downloads/download/808/worcestershire\\_landscape\\_type\\_profiles](http://www.worcestershire.gov.uk/downloads/download/808/worcestershire_landscape_type_profiles)

## Biodiversity and geodiversity

- 4.6.9 For the consideration of specific sites and preferred areas, a GIS search has been used to identify relevant designations within or in close proximity to sites (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 site and a designation that signifies a particular scale and likelihood of impact, as this will depend on the particular characteristics of the site and the pathways between the impacts and receptors, which may be hydrological, airborne, etc. All designated sites within 1.5km of proposed mineral site boundaries 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. For SSSIs, 'impact zones' exist for different types of development, within which impacts could be felt. These are not definitive, and although they are recorded as part of the SA, they are so extensive that they cover vast swathes of the county and, as such, their value to site-specific decision-making may be more limited.
- 4.6.10 The SA has also been informed by the findings of the Habitat Regulations Assessment, which considers European nature conservation sites.
- 4.6.11 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.
- 4.6.12 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...                           | SA rating |
|---|-----------|
| Be within or very close to a European or national biodiversity or geodiversity site | --        |
| Be within a locally-designated biodiversity or geodiversity site                    | -         |
| Be close to a locally-designated biodiversity or geodiversity site                  | 0         |
| Have no impact on biodiversity or geodiversity                                      | +         |
| Slightly improve a European, national or local biodiversity or geodiversity site    | ++        |
| Significantly improve a national or local biodiversity or geodiversity site         | ?         |
| Have an unknown impact on biodiversity and geodiversity                             |           |

## Cultural heritage, architecture and archaeology

- 4.6.13 GIS has been used to identify statutorily-listed buildings and scheduled monuments, and the details of their listing grade are recorded. As a general guide, when appraising specific sites, 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. Any locally-listed buildings or features of architectural, historic or cultural importance have also been identified where this information is available, but the availability of this data in GIS is currently limited. 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 at specific sites. This finer grain of detail has not been considered in this SA, but should inform any specific proposals.

4.6.14 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...  | SA rating |
|--|-----------|
| Be within or very close to a national historic environment site  | --        |
| Significantly compromise a historic environment asset through inter-visibility or clear impacts on setting through other disturbance |           |
| Slightly compromise a national historic environment asset or its setting   | -         |
| Have no impact on cultural heritage, architecture and archaeology  | 0         |
| Slightly improve a national historic environment asset or its setting  | +         |
| Significantly improve a national historic environment asset or its setting   | ++        |
| Have an unknown impact on cultural heritage, architecture, and archaeology   | ?         |

**Material assets**

4.6.15 The appraisal of strategic corridors, specific sites, 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.

4.6.16 The appraisal of strategic corridors, specific sites, and preferred areas considers whether or not they fall within some of all of the Green Belt.

4.6.17 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...                        | SA rating |
|--|-----------|
| Lead to the loss of Grade 1 agricultural land                                    | --        |
| Be wholly or significantly within the Green Belt ( $\geq 50\%$ of the site area) |           |
| Lead to the loss of grade 2 or 3 agricultural land                               | -         |
| Be slightly within the Green Belt ( $< 50\%$ of the site area)                   |           |
| Have no impact on material assets  | 0         |
| Be on previously-developed land ( $< 50\%$ of the site area)                     | +         |
| Be on previously-developed land ( $\geq 50\%$ of the site area)                  | ++        |
| Have an unknown impact on material assets  | ?         |

## Natural resources

- 4.6.18 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, preferred areas, and specific sites) relate to known areas of water quality concern, such as source protection zones.
- 4.6.19 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 corridors, specific sites, and preferred areas could have on related AQMAs has been considered.
- 4.6.20 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...                                   | SA rating |
|---|-----------|
| Be within any part of a Source Protection Zone 1  | --        |
| Be within any part of an AQMA   |           |
| Be within or adjacent to a receptor with particular sensitivities to water or air pollution |           |
| Be within any part of Source Protection Zones 2 or 3  | -         |
| Potentially impact negatively on an AQMA through operations or transport                    |           |
| Have no impact on natural resources   | 0         |
| Slightly improve air or water quality   | +         |
| Significantly improve air or water quality  | ++        |
| Have an unknown impact on natural resources   | ?         |

## Climate change and energy

- 4.6.21 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 the likely transport routes that could be used by minerals sites, 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. Any specific known opportunities to exploit renewable energy have also been considered, although no specific sites for renewable energy development have been identified.
- 4.6.22 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...  | SA rating |
|--|-----------|
| Be in a location further than 48 kilometres from potential markets   | --        |
| Require the net loss of significant tree cover ( $\geq 50\%$ of the site area) without compensatory planting |           |
| Require use of heavy fossil-fuelled vehicle haulage within the site  | -         |
| Require use of heavy fossil-fuelled vehicle haulage to reach markets   |           |

|   |    |
|---|----|
| Rely on diesel or oil-powered plant for all site uses, including electricity generation <sup>17</sup> |    |
| Have no impact on climate change and energy   | 0  |
| Provide a net gain in renewable or low-carbon energy through on-site generation                       | +  |
| Use sustainable transport within the site   |    |
| Use sustainable transport to reach markets  | ++ |
| Provide significant net renewable or low-carbon energy through on-site generation                     |    |
| Have an unknown impact on climate change and energy   | ?  |

## Flooding

4.6.23 Flood maps have been used to identify whether the strategic corridors, specific sites, and preferred areas overlay any floodzones. Consideration has also been given to the MLP's restoration approach, and how far opportunities to improve flood resilience have been adopted.

4.6.24 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ... | SA rating |
|---|-----------|
| Cause a significant flooding risk elsewhere               | --        |
| Be wholly or partly within a floodzone                    | -         |
| Have no impact on flooding                                | 0         |
| Slightly alleviate existing flood risk                    | +         |
| Significantly alleviate flood risk                        | ++        |
| Have an unknown impact on flooding                        | ?         |

## Access to services

4.6.25 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.

4.6.26 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...                                  | SA rating |
|--|-----------|
| Be located where a significant length of one or more Public Rights of Way crosses the site | --        |
| Significantly compromise the ability of people to access health, educational               |           |

<sup>17</sup> This may not always be clear from the information available.

|  |    |
|--|----|
| or other key local services  |    |
| Be located where a small length of one or more Public Rights of Way crosses the site                     |    |
| Have a slight impact on the ability of people to access health, educational or other key local services. | -  |
| Have no impact on access to services   | 0  |
| Provide a slight benefit to access to services   | +  |
| Provide a significant benefit to access to services  | ++ |
| Have an unknown impact on access to services   | ?  |

## Health and amenity

- 4.6.27 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. For specific sites and preferred areas the SA has used GIS to identify any nearby land uses, such as homes and schools, that could be susceptible to negative effects from site activities and transport. Potential future land uses have also been considered, although there is a degree of uncertainty attached to this. GIS has also allowed the identification of any sites 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.
- 4.6.28 The proximity of known airports and airfields has also been assessed, and none of the sites submitted for consideration is within the 13km radius that signifies the potential for bird strike risk.
- 4.6.29 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...                                  | SA rating |
|--|-----------|
| Cause significant adverse impacts on people from noise, dust, or other emissions.          | --        |
| Be within a HSE consultation zone  |           |
| Be within a gas major accident hazard pipeline safety zone                                 |           |
| Be within a site through which a electricity transmission line passes                      | -         |
| Cause less-than-significant adverse impacts on people from noise, dust, or other emissions |           |
| Have no impact on health and amenity   | 0         |
| Have slight positive impacts on health and amenity   | +         |
| Have significant positive impacts on health and amenity                                    | ++        |
| Have an unknown impact on health and amenity   | ?         |

## Waste

- 4.6.30 GIS has been used to identify waste sites and their safeguarded zones (a 250m buffer around the waste sites), and where these interact with proposed minerals sites.



4.6.31 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...  | SA rating |
|--|-----------|
| Compromise existing or proposed waste management infrastructure  | --        |
| Produce large volumes of waste that cannot be managed in accordance with the higher levels of the waste hierarchy (preparing for re-use; recycling; or other recovery) | --        |
| Have a minor negative impact on existing or proposed waste infrastructure  | -         |
| Produce some wastes which are unlikely to be managed in accordance with the higher levels of the waste hierarchy   | -         |
| Have no impact on waste  | 0         |
| Have a slight positive impact on waste   | +         |
| Have a significant positive impact on waste  | ++        |
| Have an unknown impact on waste  | ?         |

### Traffic and transport

4.6.32 The appraisal of traffic and transport considers how far the MLP identifies and supports potential alternatives to road transport. When considering specific sites and preferred areas, the appraisal has used GIS to identify potential transport options.

4.6.33 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...  | SA rating |
|--|-----------|
| Lead to significant unsustainable transport movements, for example by requiring HGVs to travel long distances on minor roads   | --        |
| 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 | -         |
| Have no impact on traffic and transport  | 0         |
| Have a slight positive impact on traffic and transport   | +         |
| Have a significant positive impact on traffic and transport  | ++        |
| Have an unknown impact on traffic and transport  | ?         |

### Growth with prosperity for all

4.6.34 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. In the appraisal of specific sites and preferred area, any potential for mineral sites to prevent other development coming forward has been identified.

4.6.35 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...   | SA rating |
|---|-----------|
| Significantly compromise existing or proposed infrastructure delivery or economic development                 | --        |
| Potentially compromise existing or proposed infrastructure delivery or economic development to a minor extent | -         |
| Have no impact on growth with prosperity for all  | 0         |
| Have a slight positive impact on growth with prosperity for all   | +         |
| Have a significant positive impact on growth with prosperity for all  | ++        |
| Have an unknown impact on growth with prosperity for all  | ?         |

### Provision of housing

4.6.36 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 the amount of minerals, and their timely delivery. For specific sites and preferred area, the appraisal has sought to identify where existing and potential housing sites could be compromised by minerals extraction close by.

4.6.37 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...                         | SA rating |
|---|-----------|
| Significantly compromise the provision of housing or the local environment        | --        |
| Have a minor negative impact on the provision of housing or the local environment | -         |
| Have no impact on the provision of housing  | 0         |
| Have a slight positive impact on the provision of housing                         | +         |
| Have a significant positive impact on the provision of housing                    | ++        |
| Have an unknown impact on the provision of housing                                | ?         |

### Participation by all

4.6.38 The appraisal has considered how far the MLP enables and supports communities to have a say on minerals development.

4.6.39 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...  | SA rating |
|--|-----------|
| Significantly compromise opportunities for community participation or undermine pride and social responsibility        | --        |
| Have a minor negative impact on opportunities for community participation or undermine pride and social responsibility | -         |

|  |    |
|--|----|
| Have no impact on participation by all                     | 0  |
| Have a slight positive impact on participation by all      | +  |
| Have a significant positive impact on participation by all | ++ |
| Have an unknown impact on participation by all             | ?  |

### Technology, innovation and inward investment

4.6.40 The MLP is able to offer a degree of support for new technologies and innovation. The appraisal has focused primarily on the policies, but has also sought to identify any other opportunities from the spatial elements and other sections of the MLP.

4.6.41 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...  | SA rating |
|--|-----------|
| Significantly compromise the use or development of existing or proposed innovative technologies, for example the site of a solar farm or other resource efficient technology site        | --        |
| Have a minor negative impact on the use or development of existing or proposed innovative technologies, for example the site of a solar farm or other resource efficient technology site | -         |
| Have no impact on technology, innovation and inward investment   | 0         |
| Have a slight positive impact on technology, innovation and inward investment  | +         |
| Have a significant positive impact on technology, innovation and inward investment   | ++        |
| Have an unknown impact on technology, innovation and inward investment   | ?         |

### Population (skills and education)

4.6.42 No significant linkages have been identified between minerals development and this SA objective.

4.6.43 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...   | SA rating |
|---|-----------|
| Significantly compromise the ability of the local population to access or make full use of skills and education facilities        | --        |
| Have a minor negative impact on the ability of the local population to access or make full use of skills and education facilities | -         |
| Have no impact on skills and education  | 0         |
| Have a slight positive impact on skills and education   | +         |
| Have a significant positive impact on skills and education  | ++        |
| Have an unknown impact on skills and education  | ?         |

## Population (crime & fear of crime)

4.6.44 No significant linkages have been identified between minerals development and this SA objective.

4.6.45 Thresholds to guide decision-making for the appraisal of sites:

| Minerals extraction at the site will, or is likely to ...   | SA rating |
|---|-----------|
| Significantly increase the risk of crime or increase the perceived likelihood of crime occurring          | --        |
| Have a minor negative impact on the risk of crime or increase the perceived likelihood of crime occurring | -         |
| Have no impact on crime & fear of crime   | 0         |
| Have a slight positive impact on crime & fear of crime  | +         |
| Have a significant positive impact on crime & fear of crime   | ++        |
| Have an unknown impact on crime & fear of crime   | ?         |

## 4.7 Level of detail in the SA and limitations of the appraisal

4.7.1 Where possible, the effects of the MLP upon each of the sustainability objectives is considered in terms of short, medium and long-term impacts, as well as their secondary, cumulative and synergistic<sup>18</sup> effects. It must be recognised, however, that the level of detail provided in the draft plan does not always allow for a full, in-depth appraisal.

4.7.2 The limitations of SA as a strategic tool to aid policy-making are clear; SA cannot provide a full, site-level consideration of every impact of every policy. More localised assessments, such as those made through the planning application process, will be crucial in fully understanding the sustainability of any particular development. Other regulatory regimes (for example Environment Agency permitting, Lead Local Flood Authority sustainable drainage approval, etc.) will also play a role in ensuring that development is appropriately planned and managed. Environmental Impact Assessment will be relevant to proposals coming forward under the plan, and Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (the EIA Regulations) makes clear that development within the "extractive industry" (including quarries, open cast mining and peat extraction (unless included in Schedule 1), and underground mining) will require assessment under the EIA Regulations, except "the construction of buildings or other ancillary structures where the new floorspace does not exceed 1,000 square metres". This means that almost every minerals site will be EIA development and, as such, an Environmental Statement will be required to accompany any planning application. Schedule 4 of the EIA Regulations specifies the information for inclusion in

<sup>18</sup> 'Synergistic effects' refers to the interaction or cooperation of two or more outcomes to produce a new or enhanced effect compared to their separate effects

Environmental Statements. This includes "A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors".

- 4.7.3 Limitations also arise as a result of the SA being only a strategic, desk-based appraisal. Because site appraisals have been carried out using GIS and other desktop resources, many of the distances given in the detailed matrices relate to 'point data', rather than shapes. This means, for example, that the distance given from a listed building to a site is the distance from a single point within the curtilage of that listed building. As such, the full area of the listing could be slightly different. This is not the case for some other assets, such as SSSIs, where the boundary is mapped as a polygon. It is assumed that the GIS data relied upon was current at the time of the appraisal, but data is routinely updated and amended as assets are added, removed, or amended.
- 4.7.4 All distances given are approximate, and are 'as the crow flies', unless otherwise stated.

#### **4.8 Assumptions**

- 4.8.1 We cannot know with certainty how every aspect of the MLP will materialise during and after delivery of the plan. This is especially the case for the strategic corridors (and, to a lesser extent, the site allocations and preferred areas). While each corridor has a defined, mapped boundary, we do not know which developments may come forward within which corridor, or when. Similarly, while the allocated sites, preferred areas, and their alternatives have been mapped at a more detailed scale, the precise layout and methods of working, processing, and transportation are not yet clear. Much of this information would only become apparent at application stage.

#### **4.9 Short, medium and long-term effects**

- 4.9.1 Different sites will come forward at different times, and the duration of workings will vary according to a range of factors, including the prevailing economic conditions and the site operator's particular business plan. In general, minerals sites will be worked for long periods (a minimum of five years, and possibly longer than forty years). As such, although broad estimates could be made of what would be delivered and when, it is considered more appropriate to adopt a less rigid timeframe for what are 'short', 'medium' and long-term' effects. This follows the approach set out in the previous SA, but to improve clarity and provide meaningful findings, the approach adopted by Essex County Council in its own SA will be used, whereby 'short-term' effects are taken to be those experienced during site development/construction (including infrastructure); 'medium-term' effects are those during site working; and 'long-term' effects are those after final site restoration.

## 4.10 Monitoring

- 4.10.1 The sustainability impacts arising from implementation of the MLP will primarily be monitored through a series of existing monitoring regimes. Monitoring will be carried out as part of the Minerals and Waste Local Development Framework Annual Monitoring Report (AMR). The AMR will be used to record the results of the comprehensive policy review process and monitoring schedule set out in chapter 9 of the Third Stage Consultation (and discussed in section 5.10 of this report), which includes 35 indicators, as well as targets (where appropriate) covering all of the MLP's objectives.
- 4.10.2 Other agencies also have a role to play in monitoring various issues related to the plan. The Environment Agency and Worcestershire Regulatory Services, for example, may monitor the compliance of minerals sites with environmental permits and regulations.
- 4.10.3 The SA process includes specific monitoring indicators, set out in the SA Scoping Report, that help to identify sustainability impacts. These are sometimes more general than the dedicated minerals indicators set out in the MLP, and help to build a fuller picture of sustainability in Worcestershire. These indicators are drawn from a wide range of datasets, including the Worcestershire Local Nature Partnership's annual State of the Environment Report, district council Annual Monitoring Reports, and data produced by the Office for National Statistics and government departments. Some of the SA indicators may have less direct relevance to the MLP than others, but they can help to identify social, environmental and economic trends that, if not necessarily caused by the MLP, could nevertheless be affected by changes in MLP policy and approach. The SA framework indicators are:
- Percentage of Total New Homes Built on Brownfield Land
  - Condition of the Landscape
  - Planted ancient woodland sites restored to native woodland
  - European nature conservation sites
  - Condition of SSSIs
  - Management Status of Local Sites
  - Key Breeding Birds Population Numbers
  - Number of grade I and II\* listed buildings 'at risk'
  - Proportion of undesignated heritage assets at risk
  - Amount of land falling within Agricultural Land Classifications (hectares)
  - Hectares of Green Belt land
  - Number of Air Quality Management Areas (AQMAs) in Worcestershire
  - Water quality
  - Water resource availability
  - Contaminated Land
  - Annual production of land-won aggregates (sand and gravel)
  - Annual production of land-won aggregates (crushed rock)
  - CO<sub>2</sub> emissions per head
  - Ecological Footprint (Global Hectares per Person)

- Total final energy consumption by local authority (kilo-tonnes of oil equivalent)
- Properties at risk of flooding
- Access to information: Satisfaction rates regarding Minerals & Waste planning policy
- Accessibility to Worcestershire acute hospitals
- Health ACORN categories
- Female life expectancy at birth
- Male life expectancy at birth
- Household waste produced per head of population
- Percentage/Amount of household waste recycled or composted
- Working age people with access to employment by public transport (and other specified modes)
- Access to services and facilities by public transport, walking and cycling
- CO<sub>2</sub> emissions in the county per capita arising from road transport
- Average Worcestershire household income
- Percentage employment rate (working age)
- GVA per Worcestershire resident head
- New affordable homes built
- Relationship between average salary and average house prices
- Waste Core Strategy consultation response rates
- Percentage of properties provided with kerbside household recycling collection
- New business enterprises
- Proportion of young people achieving a level 2 qualification by the age of 19
- Proportion of young people achieving a level 3 qualification by the age of 19
- Progression to higher education
- Crimes per 1,000 people
- Perceptions of anti-social behaviour

4.10.4 This SA does not recommend the introduction of any additional monitoring beyond that described above, as this may not be deliverable without additional resources and would be likely to duplicate existing regimes. Future SA work - in particular new or revised Scoping Reports - will update the SA evidence base to ensure that up-to-date indicators and sustainability issues continue to be reflected. Amendments to the SA framework are not anticipated, because the framework has been designed to take account of all relevant issues that may arise, but changes will be considered if supported by evidence.

## 5. SUSTAINABILITY APPRAISAL FINDINGS

### 5.1 Summary of key findings

5.1.1 This section of the SA considers the sustainability implications of each of the MLP sections in turn. These findings are mainly taken from the more detailed appraisal matrices found in the appendices. General observations on sustainability are also made on those parts of the MLP that are not policies (for example, the more contextual commentary at the beginning of the Plan).

### 5.2 Introduction

5.2.1 No sustainability issues have been identified within the Introduction.

### 5.3 Portrait of Worcestershire

5.3.1 No sustainability issues have been identified within the Portrait of Worcestershire.

### 5.4 Vision and objectives

5.4.1 The 'Key issues' set out in section 3 recognise the importance of the landscape, but stop short of explicitly stating that it is landscape character, above all else, that drives the MLP's approach to the location of development. This is expressed more clearly within the spatial strategy itself, although the appraisal of that chapter also makes numerous recommendations for clarification.

5.4.2 The various thematic sub-sections within the key issues seek to establish links between landscape-scale corridors and each GI component. This is more successful for some components than others; while the relationship between landscape-scale corridors, the landscape itself, and biodiversity is largely self-evident, the relationship between landscape-scale corridors and the water environment, historic environment, and access and recreation is less clear. As an example, the section on access and recreation states that "*by viewing and designing individual sites as part of a landscape-scale corridor, opportunities to connect, extend or enhance recreation assets can be optimised*". It clearly makes sense to consider the opportunities for access and recreation by taking a wider view, but the justification for doing so in a landscape-scale corridor - which is presumably the same corridor to be used for all other GI components (i.e. the plan's strategic corridors) - is unclear.

5.4.3 The key issues section should be clearer that landscape character is the defining element which guides the approach of the MLP, and that all other green infrastructure elements have been considered in terms of how they contribute to landscape character.

5.4.4 The MLP's 13 objectives have been assessed for their compatibility with the 17 SA objectives. The results of this assessment are set out overleaf.



| Compatibility of the Minerals Local Plan Third Stage Consultation objectives with the SA objectives |  | Minerals Local Plan Third Stage Consultation objectives <sup>19</sup> |  |  |  |  |  |   |   |  |  |   |   |   |
|---|--|---|--|--|--|--|--|---|---|--|--|---|---|---|
|   |  | 1. Deliver development in accordance with spatial strategy            | 2. Maximise secondary materials and minerals waste | 3. Steady and adequate supply of sand and gravel | 4. Steady and adequate supply of bricks/brick clay | 5. Foster an adequate and diverse supply of building stone | 6. Enable other minerals inc. crushed rock and silica sand | 7. Safeguard minerals and infrastructure from sterilisation | 8. Promote community inclusion in mineral development | 9. Mitigate/adapt to climate change/prudent resource use | 10. Protect and enhance health, well-being, safety & amenity | 11. Protect & enhance natural/historic env. & local character | 12. Protect and enhance the local economy | 13. Optimise economic/social/env. benefits through GI |
| Sustainability Appraisal objectives   | 1: Landscape                                       | +   | ?/+  | 0  | 0  | 0  | 0  | +   | 0   | ?  | +  | ++  | 0   | ++  |
|   | 2: Biodiversity and geodiversity                   | +   | ?/+  | 0  | 0  | 0  | 0  | +   | 0   | +  | 0  | ++  | 0   | ++  |
|   | 3: Cultural heritage, architecture and archaeology | 0   | ++   | +/?  | +  | +  | +/?  | +   | 0   | ?  | 0  | ++  | 0   | +   |
|   | 4: Material assets                                 | 0   | +/-  | +  | +  | +  | +  | ++  | 0   | ++   | 0  | +   | 0   | +   |
|   | 5: Natural resources                               | +/-   | ?  | 0  | 0  | 0  | 0  | +   | 0   | +  | 0  | ++  | 0   | +   |
|   | 6: Climate change and energy                       | +   | +  | +  | +  | +  | +  | +/-   | 0   | ++   | 0  | +   | -/+                                       | +   |
|   | 7: Flooding  | 0   | ?  | 0  | 0  | 0  | 0  | +   | 0   | ++   | +  | ?   | 0   | +   |
|   | 8: Access to services                              | 0   | 0  | 0  | 0  | 0  | 0  | ?   | 0   | 0  | +  | 0   | 0   | +   |
|   | 9: Health and amenity                              | 0   | ?  | 0  | 0  | 0  | 0  | 0   | 0   | +  | ++   | +   | 0   | +   |
|   | 10: Waste  | 0   | ++   | ?  | ?  | ?  | ?  | 0   | 0   | +  | 0  | 0   | 0   | 0   |
|   | 11: Traffic and transport                          | 0   | ?  | +/?  | +/?  | +/?  | +/?  | +/-   | 0   | ++   | 0  | 0   | -/+                                       | +   |
|   | 12: Growth with prosperity for all                 | -/+   | 0  | +  | +  | 0  | +  | +/-   | 0   | -/+  | 0  | -/+   | +   | 0   |
|   | 13: Provision of housing                           | -/+   | +  | +  | +  | +  | +  | +/-   | 0   | -/+  | 0  | -/+   | +   | +   |
|   | 14: Participation by all                           | 0   | 0  | 0  | 0  | 0  | 0  | 0   | ++  | 0  | 0  | 0   | 0   | 0   |
|   | 15: Technology, innovation and inward investment   | 0   | 0  | ?  | ?  | ?  | ?  | +/-   | 0   | ++   | 0  | ?   | +   | 0   |
|   | 16: Population (skills & education)                | 0   | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0  | 0  | 0   | +   | 0   |
|   | 17: Population (crime & fear of crime)             | 0   | 0  | 0  | 0  | 0  | 0  | 0   | 0   | 0  | 0  | 0   | 0   | 0   |

<sup>19</sup> For presentational purposes, this chart uses shortened, edited descriptions of the MLP objectives. The full MLP objectives that have informed the compatibility scoring are set out in section 3.2 of this document.

- 5.4.5 The compatibility analysis of the MLP objectives and the SA objectives necessarily draws very broad-brush conclusions and does not seek to reflect every eventuality that could occur as a result of the interaction between the MLP and SA objectives. It recognises that development in the most general sense has the potential to cause negative effects on some receptors, but does not assert that this will be the case in all, or even most, instances; it merely recognises that the act of physically developing land can give rise to risks that would not occur if that land was not developed. It may be that development improves on what was there before, or offers opportunities to secure net gain in the long term for the environment and for people. But it is not the purpose of this matrix to reflect these nuances; more detail on the MLP's likely impacts is provided in the substantive appraisal sections.
- 5.4.6 There are no significant negative compatibility effects between any of the MLP objectives and the SA objectives, although there are some potential areas of concern. There are some significant positive effects where compatibility is particularly strong. In most cases, however, no particular compatibility issues arise (either positive or negative).
- 5.4.7 MLP Objective 1 is compatible in particular with those SA objectives related to green infrastructure, as the spatial strategy seeks to enable a GI-led approach to restoration. The benefits to the historic environment of development within the corridors are, however, less clear-cut; as such, there is less of a positive compatibility rating with SA objective 3. MLP objective 1 could potentially support or hamper different types of built development, depending on whether the development was proposed within or outside the areas guided by the spatial strategy.
- 5.4.8 MLP Objective 2 is strongly compatible with SA objectives 3 and 10, as it should help to reduce waste and to ensure that redundant building materials are available to conserve the historic environment. It is also positively compatible with the provision of housing (through making recycled aggregates available) and with safeguarding material assets and mitigating climate change (through reducing the need for new materials, and the emissions associated with their extraction and processing). There are no other particular compatibility issues between the objectives, with many unknowns, depending on location and other specifics that cannot be known at this stage.
- 5.4.9 MLP Objective 3 raises no significant compatibility issues with any SA objective. There are positive compatibility effects on those SA objectives dealing with built development, as the MLP objective seeks to ensure sufficient minerals to enable construction to take place. There is also positive compatibility with the climate change and transport SA objectives, as providing sand and gravel within Worcestershire will reduce imports.
- 5.4.10 MLP Objective 4 has very similar compatibility to the SA objectives as MLP objective 3. One minor difference is that a sufficient supply of brick clay within a known location is already established, and so there is less uncertainty as to potential negative effects on the historic environment.
- 5.4.11 MLP Objective 5 has the same compatibility issues with the SA objectives as MLP Objective 4, for the same reasons.
- 5.4.12 MLP Objective 6 has the same compatibility with the SA objectives as MLP Objective 3, for the same reasons.

- 5.4.13 MLP Objective 7 has generally positive compatibility with the environmental SA objectives, as it will make development more difficult in certain circumstances, thereby avoiding potentially negative environmental effects associated with development. This approach could also reduce compatibility with those SA objectives concerned with growth and development, but as the safeguarding of resources will be needed to enable development to occur now and in the future, the compatibility here is mixed.
- 5.4.14 MLP Objective 8 raises very few compatibility issues in relation to the SA objectives. It is strongly compatible with SA objective 14, as both are concerned solely with community participation.
- 5.4.15 MLP Objective 9 is strongly compatible with those SA objectives which concern climate change and the mitigation of/adaptation to its effects, including flooding, traffic, and technology. Due to the links between built development and climate change - including emissions from construction and operation – this MLP objective could potentially compromise delivery of growth and development (SA objectives 12 and 13), although this would be too simplistic a reading on its own; development and housing also has a role to play in prudent resource use and adapting to climate change. The compatibility here is therefore mixed. Compatibility between this objective and those SA objectives concerning landscape and cultural heritage, architecture and archaeology is unclear, as the physical manifestation of development related to climate change can have effects on those parts of the environment susceptible to visual impacts.
- 5.4.16 MLP Objective 10 raises very few compatibility issues in relation to the SA objectives. It is strongly compatible with SA objective 9, as both are concerned with health and amenity. It is also positively compatible with the SA objectives on landscape (visual impact can affect people's amenity); flooding (avoiding increases in flood risk can help to protect people's health and well-being); and access to services (access to services and facilities is crucial to health and well-being).
- 5.4.17 MLP Objective 11 is strongly compatible with the environmental SA objectives. Compatibility with SA objectives 7 and 15 (on flooding and technology, respectively) is unclear, as the effects on protection and enhancement of the environment and, especially, distinctive local character, will depend entirely on the specific minerals development. Due to the potential of built development to adversely affect the natural and historic environment, this SA objective could compromise delivery of growth and development (SA objectives 12 and 13). However, the compatibility here is mixed, as development and housing also have a role to play in protecting and enhancing the environment.
- 5.4.18 MLP Objective 12 is positively compatible with those SA objectives concerning growth, development, and inward investment (objectives 12, 13, and 15), as these all support the local economy. There is a risk of incompatibility with SA objectives 6 and 11 (climate change and traffic & transport, respectively), as economic development can often lead to increases in carbon emissions and vehicle movements, although this cannot always be assumed. Positive compatibility between these objectives is also possible, depending on how the economy is developed, as a low-carbon economy that reduces transport movements would avoid these potential conflicts.
- 5.4.19 MLP Objective 13 is strongly compatible with all those SA objectives concerning the various aspects of green infrastructure – especially landscape, and biodiversity and

geodiversity. No substantive compatibility issues have been identified with any other SA objective.

- 5.4.20 Because the MLP objectives have informed the policies, a greater level of detail on the compatibility of each MLP objective with each SA objective can be found in the relevant MLP policy appraisal matrices and commentaries in this report.

## 5.5 Key diagram

- 5.5.1 The key diagram is not considered to raise any substantive sustainability issues, as it merely describes the policies of the plan, which have been appraised elsewhere in this SA. It is noted, however, that the black circles used on the maps could give a misleading impression of the relative size of settlements; Perhore, for example, is shown as being larger than Droitwich Spa and Evesham, and a similar size to Wythall.

## 5.6 Spatial Strategy: Location of mineral development

### Strategic corridors

- 5.6.1 In overall SA terms, the use of the corridors offers a range of benefits – especially in the longer term - to those SA objectives concerned with green infrastructure. While there is no practical impediment to seeking and securing individual benefits outside the corridors, the main advantage of the spatial strategy is in the opportunity for improvements on a coherent, landscape scale, across a range of green infrastructure functions. The appraisal matrices in Appendix 2(b) show that by guiding development to areas with the greatest potential, and by establishing specific priorities within these areas, the benefits from minerals growth will be less 'ad hoc' and more joined-up.
- 5.6.2 The MLP's approach is driven primarily by environmental concerns, and it is possible that the economic and social benefits/impacts of minerals development could be under-optimised and overlooked, respectively.
- 5.6.3 Potential negative effects of the corridors are:
- They do not include all potential mineral resources and, in light of the MLP's recognition in paragraph 3.4 of the "*current shortfall in the landbank of permitted reserves of sand and gravel*", this issue is relevant. The exclusion of some resources is, however, to be expected, as not all resources will be viable, and some resources are so large that there may be little value in their allocation, beyond making development as easy as possible. The interactive minerals map<sup>20</sup> shows various concentrations of key and significant resources that do not fall within the strategic corridors. Some of these resources are in close proximity to settlements and could potentially offer sustainability benefits in terms of reduced transport and climate change impacts as a result of their proximity to markets.
  - They focus heavily on sand and gravel and, to a lesser extent, on Mercia Mudstone, and are less successful in reflecting the location of and/or need for other mineral resources.
  - They are so large that there may be little meaningful connection between sites within the same corridor, depending on their location. To take an extreme

<sup>20</sup> <http://gis.worcestershire.gov.uk/Website/MineralsLocalPlan/>

example, within the Salwarpe Tributaries strategic corridor, a site just south of Newtown, in Bromsgrove district, could be over 20km away from a site near Hawford, in Wychavon district. Functional linkages between such sites may be limited, while sites nearer to either, but outside the corridor, could potentially make a better contribution. The size of the corridors also means that specific effects and specific receptors can be difficult to identify in this sustainability appraisal, which can increase the degree of uncertainty when identifying effects on any SA objective.

- They optimise certain environmental opportunities at the potential expense of others, or at the expense of social or economic objectives. A site outside a strategic corridor but with excellent access to sustainable transport modes, for example, may perform better in terms of transport sustainability, climate change, and air quality than a site within a corridor that is not well-connected. There are many areas within the corridors where this could be the case.
- None of the restoration priorities will make a "*strong positive contribution*" toward the historic environment. This may be a missed opportunity to better integrate the historic environment as a key element of green infrastructure.
- There is no corridor covering the west of the county. The lack of provision here could mean long transport distances for minerals, which could in turn increase carbon emissions and climate change effects. Mineral resources west of Knightwick are, however, relatively limited, and none are sufficiently large to make a similar-scale contribution as the existing corridors.

5.6.4 The MLP states, in paragraph 5.3, that "*The precise definition of the strategic corridors was influenced by the components of green infrastructure*". This is only a partial description of how the boundaries of the corridors have been determined, and may also give the impression that all of the components of green infrastructure have been taken into account; it appears from other parts of the MLP that this is not the case, as the historic environment, for example, has not informed the locations. Paragraph 5.3 also states that "*Due to the ability of landscape character to encompass and influence many aspects of green infrastructure, and the benefit of precise boundaries established through the Landscape Character Assessment Supplementary Guidance, landscape character was the predominant factor used to identify cohesive clusters of resources and to identify the precise boundaries of the strategic corridors*". Worcestershire's Green Infrastructure Framework 2, however, states that biodiversity is "*the key component of Green Infrastructure*" and one which has been given "*greater importance*" than other attributes when determining Environmental Character Areas. Whilst the corridors are not Environmental Character Areas (the issues around this distinction are considered elsewhere in this report), the principle of biodiversity taking the 'leading' role in green infrastructure means that the approach adopted in the MLP would benefit from further explanation.

5.6.5 Where the strategic corridors are discussed in the introductory section of the Spatial Strategy chapter of the MLP (in paragraphs 5.1-5.4 and elsewhere), the text tends to refer to them containing "*mineral resources*", with the implication being that they contain all types of mineral resources. The fact that the corridors are based primarily on sand and gravel, and to a lesser extent on Mercia mudstone, can become lost.

### **Policy MLP 1: Strategic Location of Development**

5.6.6 Much of the policy wording in part (a) is superfluous; the policy lists four types of minerals development that will be allowed, but these four collectively encompass every

possible type of development. As such, part (a) could be simplified to "*Planning permission will be granted for mineral development within the strategic corridors*".

### **Policy MLP 2: Avon and Carrant Brook Strategic Corridor**

- 5.6.7 The MLP notes in paragraph 5.35 that the boundary of this strategic corridor, which is based on landscape character type, has been amended to reflect the Cotswolds AONB. This is the only change to the 'natural' overlap between mineral resources and landscape character areas in this corridor, and is a logical approach, as the AONB introduces a policy restriction on minerals development that would undermine such areas falling within the corridors. There is, however, a small area of land near Eckington which is within the cohesive landscape type, but not within the AONB, which has been excluded from the corridor. The reasoning for this should be clarified.
- 5.6.8 There are six priorities for this corridor, which collectively make a "*strong positive contribution*" to six GI and climate change functions. The MLP does not identify any of the priorities as likely to conflict with any of the GI/climate change functions.
- 5.6.9 The appraisal found that there could be positive, uncertain, and no effects on a range of SA objectives, but that significant effects were unlikely (subject to the caveats on uncertainties set out in the methodology section of this report). Some of the judgements of positive effects could also have uncertain or negative secondary effects, but none of the SA objectives are predicted to be primarily negatively affected. The full results of the appraisal are provided at Appendix 2(b), and are summarised in the table later in this section.

### **Policy MLP 3: Lower Severn Strategic Corridor**

- 5.6.10 The only change to the 'natural' overlaps between mineral resources and landscape character areas in this corridor is that the landscape character area has been cut off by the River Severn Catchment Flood Management Plan sub-area "Lower Severn Corridor and Leadon Vale". This boundary has been selected as a convenient 'break' to prevent an overly-extended corridor extending north-eastwards where very limited viable resources are known to exist. As this modification is a departure from the transparent methodology used to define the corridors, further explanation of why this particular boundary was chosen over any other would be beneficial.
- 5.6.11 It is not known where development might occur within the corridor. The corridor does, however, contain all of the MLP's three specific sites (Clifton East, Clifton South, and Land at Ryall North), as well as one of the MLP's preferred areas (Ryall East). Further appraisal of each of these is provided in the relevant matrices and commentary in the site specific section of this SA Report. The fact that the sites and preferred areas have been allocated is no guarantee that they will be developed - as has been seen with some of the allocations from the previous MLP. It does, however, provide a very strong indication that development in these locations is likely, and this has led to the identification of significant positive effects on the growth and housing SA objectives.

- 5.6.12 There are six priorities for this corridor, which collectively make a "*strong positive contribution*" to seven GI and climate change functions. The MLP also identifies a specific likely conflict between agriculture and the creation of sub-regional semi-natural greenspace.
- 5.6.13 The appraisal found that there could be positive, uncertain, negative and no effects on a range of SA objectives, but that significant effects were unlikely (subject to the caveats on uncertainties set out in the methodology section of this report). Some of the judgements of positive effects could also have uncertain or negative secondary effects, and only one of the SA objectives is predicted to be primarily negatively affected. The full results of the appraisal are provided at Appendix 2(b), and are summarised in the table later in this section.

#### **Policy MLP 4: North East Worcestershire Strategic Corridor**

- 5.6.14 There are four priorities for this corridor, which collectively make a "*strong positive contribution*" to five GI and climate change functions. The MLP also identifies a specific likely conflict between agriculture and the creation of sub-regional semi-natural greenspace.
- 5.6.15 The appraisal found that there could be positive, uncertain, negative and no effects on a range of SA objectives, and that significant effects could be likely on one objective (subject to the caveats on uncertainties set out in the methodology section of this report). Some of the judgements of positive effects could also have uncertain or negative secondary effects. The full results of the appraisal are provided at Appendix 2(b), and are summarised in the table later in this section.
- 5.6.16 This is the only corridor for which the SA has identified potential significant negative effects – in this case on the 'natural resources' SA objective which seeks to "*protect and enhance water and air quality*". Due to the combination, extent, and sensitivity of potential receptors within the corridor, it performs particularly poorly against this objective, and potential risks from minerals extraction, processing and transport are identified. The SA is not suggesting that these effects will be realised, as other policies within the MLP (and through other regulatory regimes) will act to ensure negative effects are avoided and mitigated. It does, however, identify that almost the entire corridor is within one or more source protection zones. This suggests that the MLP should give consideration to a priority within this corridor that would contribute to water quality enhancement, as none of the current corridor priorities are considered likely to make a "*strong positive contribution*" to the water environment.
- 5.6.17 The corridor contains the Lickey End AQMA, and surrounds or is close to four other AQMAs. An Action Plan for air quality in Bromsgrove<sup>21</sup> found that whilst unlikely to be achievable, a reduction in traffic flows on the M42 could significantly reduce NO<sub>x</sub> levels. It also found that a smaller proportional reduction in heavy duty vehicle flows could achieve the same effects, as a result of "*targeting the most polluting source*". This shows that minerals development that would require vehicle movements on the M42 could worsen air quality both at the AMQA and more widely.

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<sup>21</sup> Casella Stanger (2004) Bromsgrove District Council Local Air Quality Management - Final Action Plan

## **Policy MLP 5: North West Worcestershire Strategic Corridor**

- 5.6.18 There are seven priorities for this corridor, which collectively make a "*strong positive contribution*" to five GI and climate change functions. The MLP also identifies a specific likely conflict between agriculture and the creation of sub-regional semi-natural greenspace.
- 5.6.19 The appraisal found that there could be positive, uncertain, negative and no effects on a range of SA objectives, but that significant effects on any objective are unlikely (subject to the caveats on uncertainties set out in the methodology section of this report). Some of the judgements of positive effects could also have uncertain or negative secondary effects. The full results of the appraisal are provided at Appendix 2(b), and are summarised in the table later in this section.

## **Policy MLP 6: Salwarpe Tributaries Strategic Corridor**

- 5.6.20 There are three priorities for this corridor, which collectively make a "*strong positive contribution*" to six GI and climate change functions, although the contribution the MLP claims the first of the priorities will make to the water environment is questioned in the SA matrix in Appendix 2(b), and further evidence of the reasons for this assertion are sought. It also identifies a specific likely conflict between agriculture and the creation of sub-regional semi-natural greenspace.
- 5.6.21 The appraisal found that there could be positive, uncertain, negative and no effects on a range of SA objectives, but that significant effects on any objective are unlikely (subject to the caveats on uncertainties set out in the methodology section of this report). Some of the judgements of positive effects could also have uncertain or negative secondary effects. The full results of the appraisal are provided at Appendix 2(b), and are summarised in the table below.
- 5.6.22 The only change to the 'natural' overlaps between mineral resources and landscape character areas in this corridor is that the landscape character area has been cut off by the River Severn Catchment Flood Management Plan sub-area boundary, to keep the corridor "*sufficiently focused and meaningful on a landscape-scale, but large enough not to unduly fetter opportunities for the working of potential clay resources*". As this modification is a departure from the transparent methodology used to define the corridors, further explanation of why this particular boundary was chosen over any other would be beneficial. Extending the Salwarpe Tributaries Strategic Corridor by removing the artificial boundary which cuts across the cohesiveness of the landscape character area would allow more of the clay resource to be captured within the corridor. This would have sustainability benefits for those SA objectives concerned with economy and growth by increasing the potential area for development. Although there is currently sufficient clay within existing permitted reserves, these resources are concentrated within just two sites. Paragraph 6.1 of the MLP states that "*To ensure that minerals are readily available to meet market demand and to minimise uncertainty and volatility in supply, it is important for the Minerals Local Plan to ensure that [inter alia] 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 ... large landbanks at very few sites do not stifle competition*".



Paragraph 6.1 reflects government policy<sup>22</sup>, and the approach taken to defining the Salwarpe Tributaries Strategic Corridor may benefit from clearer explanation, including information on how these risks have been considered in planning for clay.

- 5.6.23 It is unclear why the pictures of Wichenford and Bredicot have been used on pages 100 and 101 respectively, within the chapter on the Salwarpe Tributaries Strategic Corridor; neither location is within the corridor, which could cause confusion.

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<sup>22</sup> Department for Communities and Local Government (2012) National Planning Policy Framework, paragraph 145.

## Summary of SA findings for the Strategic Corridors

| Strategic corridor               | SA Objectives |                                  |  |                    |                      |                              |             |                       |                       |           |                           |                                    |                          |                          |  |                                       |  |
|----------------------------------|---------------|----------------------------------|--|--------------------|----------------------|------------------------------|-------------|-----------------------|-----------------------|-----------|---------------------------|------------------------------------|--------------------------|--------------------------|--|---------------------------------------|--|
|                                  | 1: Landscape  | 2: Biodiversity and geodiversity | 3: Cultural heritage, architecture and archaeology | 4: Material assets | 5: Natural resources | 6: Climate change and energy | 7: Flooding | 8: Access to services | 9: Health and amenity | 10: Waste | 11: Traffic and transport | 12: Growth with prosperity for all | 13: Provision of housing | 14: Participation by all | 15: Technology, innovation and inward investment | 16: Population (skills and education) | 17: Population (crime & fear of crime) |
| <b>Avon and Carrant Brook</b>    | +/-           | +/?                              | 0  | +/?                | +/?                  | +/?                          | +/?         | +/-                   | 0                     | 0         | ?                         | +                                  | +                        | 0                        | 0  | 0                                     | 0                                      |
| <b>Lower Severn</b>              | +/-           | +/-                              | -/?  | +/-                | +/-                  | +/?                          | +/?         | +/-                   | 0                     | 0         | ?                         | +                                  | +                        | 0                        | 0/+  | 0                                     | 0                                      |
| <b>North East Worcestershire</b> | +/?           | +/?                              | 0  | -/+                | --                   | +/?                          | ?           | +/-                   | 0                     | 0         | ?                         | +                                  | +                        | 0                        | 0  | 0                                     | 0                                      |
| <b>North West Worcestershire</b> | +/-           | +/?                              | -/?  | -/+                | -/+                  | +/?                          | +/?         | +/-                   | 0                     | 0         | ?                         | +                                  | +                        | 0                        | 0  | 0                                     | 0                                      |
| <b>Salwarpe Tributaries</b>      | +/-           | +/?                              | 0  | -/+                | -/?                  | +/?                          | ?           | +/-                   | 0                     | 0         | ?                         | +                                  | +                        | 0                        | 0  | 0                                     | 0                                      |

### Colours and symbols used in the appraisal

|                             |    |                   |   |                             |    |
|-----------------------------|----|-------------------|---|-----------------------------|----|
| Minor positive impact       | +  | Neutral/no impact | 0 | Minor negative impact       | -  |
| Significant positive impact | ++ | Unknown impact    | ? | Significant negative impact | -- |

## Specific sites and preferred areas

- 5.6.24 The MLP has allocated three "specific sites" and two "preferred areas", but the purpose of these is not fully explained. There is no specific policy for the allocations (unlike for the strategic corridors), and the text in the reasoned justification at paragraph 5.13 simply states that "*Planning applications for specific sites and preferred areas will be expected to demonstrate that the proposed development will enable the sustainable supply of minerals, contribute towards the priorities identified for each corridor...*". This approach is the same as for a windfall proposal and so, beyond giving an indication to operators and communities of where development is likely to happen, the value of allocating specific sites and preferred areas may be limited.
- 5.6.25 The opportunities and benefits of having sites could be made clearer if they had specific policies or a form of 'design brief'. The MLP states, at page 108, that "*The Mineral Planning Authority is asking whether Supplementary Planning Documents that "masterplan" the green infrastructure components of specific sites and preferred areas would be supported. These would need to be supported by key partners and have industry and community buy-in at the level of information required would exceed that provided through the call for sites*". The SA would support such an approach.
- 5.6.26 Notwithstanding the above, the sustainability of specific sites and preferred areas has been considered in Appendix 2(f). The MLP considered how 30 separate site proposals submitted by landowners/operators performed against deliverability criteria. One of the tests was whether or not the proposal would be "*acceptable in planning terms*", which the Deliverability Assessment<sup>23</sup> held to mean "*sites within the strategic corridors and with no significant transport issues which cannot be managed through appropriate conditions*". These deliverability criteria have not been followed in the SA, because the strategic corridors approach itself has reasonable alternatives. As such, all 30 sites have been subject to appraisal.
- 5.6.27 The key findings for the specific sites allocated in the MLP are:
- **Clifton East**

Potential significant negative effects were identified in relation to the 'biodiversity and geodiversity' SA objective. The site adjoins the Ashmoor Common SSSI for much of its length. There are also many Local Wildlife Sites in close proximity, most of which involve marshland or wet woodland, raising concerns over risks from dewatering. There is a Local Geological Site within the site boundary, with potential for disturbance.

Potential significant negative effects were also identified on the 'cultural heritage, architecture and archaeology' SA objective; two listed buildings are just beyond the site boundary, and their open landscape setting could be negatively affected in the short to medium term. The adjacent Ashmore Common is a site with high potential for preserved organic remains sealed within peat deposits. Any such remains would be at high risk of desiccation if there were to be any loss of site hydration.

The 'material assets' SA objective could also see potential significant negative effects; almost the entire site falls within grade I agricultural land, with a very

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<sup>23</sup> Worcestershire Minerals Local Plan Background Document (September 2016) Call for Sites – Deliverability Assessment, available at [www.worcestershire.gov.uk/mineralsbackground](http://www.worcestershire.gov.uk/mineralsbackground)

small part to the east falling within grade 2. All of this land is considered to be 'best and most versatile'.

The 'access to services' SA objective could also see potential significant negative effects, as the site is crossed by two public footpaths and a bridleway, any or all of which may be compromised and require temporary or permanent closure or diversion.

The likely effects on the remaining SA objectives were less pronounced, with minor negative effects recorded against the 'landscape', 'natural resources', 'health and amenity', and 'traffic and transport' objectives, and no effects on the 'flooding' or 'waste' objectives.

- **Clifton South**

Potential significant negative effects were identified in relation to the 'biodiversity and geodiversity' SA objective. The site is further than Clifton East from the Ashmoor Common SSSI, but negative effects cannot be ruled out. The Clifton Arles LWS adjoins the site, and other LWS are in close proximity, with relatively limited intervening development, meaning that some degree of negative impact is possible. Clifton Arles Ancient Semi-Natural Woodland also abuts part of the site boundary.

Potential significant negative effects were also identified on the 'access to services' SA objective, as the site is crossed by a public footpath, which may be compromised and require temporary or permanent closure or diversion.

The likely effects on the remaining SA objectives were less pronounced, with minor negative effects recorded against 'landscape', 'material assets', 'natural resources', 'climate change and energy', 'flooding', 'health and amenity', and 'traffic and transport'. Minor negative effects but with a greater degree of uncertainty were recorded for the 'cultural heritage, architecture and archaeology' SA objective. No effects were recorded against the 'waste' objective.

- **Land at Ryall North**

No significant positive or negative effects were identified for any SA objective. Minor negative effects were predicted for the objectives on 'landscape', 'cultural heritage, architecture and archaeology', 'climate change and energy', and 'flooding'. Minor effects were also identified for the SA objectives on 'material assets' and 'natural resources', but with a greater degree of uncertainty. No effects were recorded against the 'biodiversity and geodiversity', 'health and amenity', or 'waste' objectives.

The appraisal also identified the potential for cumulative effects to arise as a result of development of Clifton East and Clifton South (as well as with development of the discounted site 'Severn Stoke, Sandford'). Cumulative effects could be felt on a variety of receptors, including but not limited to:

- **Landscape**

While each individual site may be able to be accommodated through appropriate landscape treatment, the development of multiple sites may exceed the landscape capacity.

- **Biodiversity**

Development of Clifton East and Clifton South could lead to cumulative effects on The Bogs and Clifton Arles LWS, and development alongside the discounted

site 'Severn Stoke, Sandford' could lead to cumulative effects on Brickpits Plantation & Sandford Pits and the River Severn. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions were to be granted in this location over the plan period.

- **Heritage**  
Cumulative impacts on heritage assets around Clifton South, Clifton East, and/or the discounted site 'Severn Stoke, Sandford' could arise if these sites were to be developed at the same time.

5.6.28 The key findings for the preferred areas allocated in the MLP are:

- **Land North of Wolverley Road**  
Potential significant negative effects were identified in relation to the 'landscape' SA objective. Most of the site falls within part of Sionhill House undesignated park and garden of local importance.  
Potential significant negative effects were also identified on the 'material assets' objective. The entire site falls within grade 3 agricultural land, which may or may not include grade 3a best and most versatile agricultural land. The site is also wholly within the Green Belt and, whilst mineral extraction is not inappropriate (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings may be inappropriate. The 'access to services' SA objective could also see potential significant negative effects, as the site is crossed by a footpath and a bridleway, both of which may be compromised and may require temporary or permanent closure or diversion. The likely effects on the remaining SA objectives were less pronounced, with minor negative effects recorded against the 'biodiversity and geodiversity', 'cultural heritage, architecture and archaeology', 'natural resources', 'climate change and energy', 'health and amenity', and 'traffic and transport' SA objectives. No effects were recorded against the 'flooding' or 'waste' objectives.
- **Ryall East**  
Potential significant negative effects were identified in relation to the 'material assets' SA objective, as the entire site falls within grade 1 best and most versatile agricultural land. The likely effects on the remaining SA objectives were less pronounced, with minor negative effects recorded against the 'landscape', 'biodiversity and geodiversity', 'cultural heritage, architecture and archaeology', 'natural resources', 'climate change and energy', 'health and amenity', and 'traffic and transport' objectives.  
Minor negative effects but with a greater degree of uncertainty were recorded for the 'access to services' SA objective. No effects were recorded against the 'flooding' or 'waste' objectives.

The appraisal also identified the potential for cumulative effects to arise as a result of development of Land north of Wolverley road alongside the nearby discounted sites 'Land South of Wolverley Road' and/or - to a lesser extent - 'Wolverley Glebe'. This includes potential negative landscape effects as, while each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination effect of all of the sites may exceed the landscape capacity.

- 5.6.29 Most of the sites proposed in the 'calls for sites' have not been allocated as either specific sites or preferred areas, because they do not accord with the MLP's deliverability criteria. The full results of the appraisal of all submitted sites - including the sites and preferred areas above, as well as the 25 submitted options that have not been progressed - is provided in Appendix 2(f). The table at the end of this section provides a summary of the likely SA effects of each submitted site.
- 5.6.30 The appraisal of sites is necessarily very high level; there is insufficient information on where, within the site boundaries, development may occur, how extensive it may be in scale or duration, and how it might relate to its surroundings. Conclusions are therefore broad. Where effects could be positive or negative, this is recorded, although the SA adopts a precautionary principle where appropriate, to avoid underestimating potential difficulties. As such, most of the sites are predicted to have minor negative effects on most of the SA objectives. This is partly because the specific effects of a site will vary across its lifetime and, although the MLP policies should ensure positive benefits in the medium to longer term, it is likely that development at any scale will cause at least some localised negative effects on a range of receptors due to the unavoidable nature of construction activities. More information on the limits and uncertainties associated with the appraisal is given in the methodology section of this report.
- 5.6.31 The site appraisals show that none of the sites is predicted to have significant beneficial effects on any SA objective, but that the contribution of minerals can have a valuable positive effect on those SA objectives relating to the economy, through their ability to contribute to housing and growth. These effects may turn out to be even more positive if any site is able to make a particularly substantial contribution to the county's identified requirements.
- 5.6.32 The appraisal shows that the three specific site 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. This is because the SA judgements cannot be equated across the objectives (such that a major negative effect on biodiversity, for example, is 'equal' to a major negative effect on access to services). The appraisal has insufficient evidence on the likely scale of operations and deliverable mitigation measures to rule certain effects in or out, so a crude totalling of reds, pinks or greens cannot be used to definitively state which sites would be better than others. The appraisal also considers nearby proposed sites and potential cumulative effects, which can increase the intensity and/or duration of any likely effect. More detailed expert consideration is required under each sustainability topic, supported by more detailed site-specific assessments, to provide a robust view. The purpose of the sites SA is, therefore, to help guide the development of the MLP by identifying potential issues of importance and highlighting the mitigation that may be required to ameliorate the risk of negative effects. The SA has only considered a single site proposal to be such a risk to the environment that its allocation could not be supported without far more robust assurances over effects on biodiversity. This is the

Bow Farm site, which has not been taken forward as either a specific site or a preferred area in the MLP.

- 5.6.33 The SA framework has been modified slightly for the sites appraisal to avoid repeating unnecessary irrelevant information. SA objectives 14, 15, 16 and 17 have not been displayed, as none of the sites could reasonably be expected to have a significant or even noticeable minor effect on them. No issues have been recorded for any site in relation to Objective 10 (waste), but the potential for effects is more marked, as a site next to an existing or proposed waste facility could compromise delivery. As such, the waste objective remains visible.







## 5.7 Steady and adequate supply of mineral resources

- 5.7.1 All of the 'steady supply of resources' policies follow the same pattern, and tend to use substantially the same wording. Having specific policies for each mineral type potentially allows for the particular issues associated with their supply to be reflected, but this is not the case; the same approach is used, for example, in the policy on brick clay and clay products (for which there are ample permitted reserves well beyond the plan period) that is used in the policy on crushed rock (for which there is a recognised shortfall of permitted reserves). The only policy in this section to recognise the impetus to increase supply is *Policy MLP 8 Steady and Adequate Supply of Sand and Gravel*, which differentiates between the earlier and later phases of the plan period. While the supply of crushed rock, for example, appears unlikely to be increased due to various constraints, the policies' blanket approach may be missing opportunities for greater specificity.
- 5.7.2 The text after the first sentence in paragraph 6.11 of the reasoned justification is probably not appropriate within the main body of the MLP, and is more suited to a footnote.

### **Policy MLP 7 Contribution of Substitute, Secondary and Recycled Materials and Mineral Waste to Overall Minerals Supply**

- 5.7.3 The appraisal found this policy to have largely uncertain effects on most of the SA objectives. Avoiding extraction of primary minerals can, in turn, avoid the need for the inevitable disturbance associated with extraction, which poses particular risks to the environmental objectives. The negative effects, however, may be displaced to an extent by the need for development and transport associated with secondary minerals provision. The exact type, location, and scale of development that may come forward is currently unknown. Overall, the savings are expected to produce a minor beneficial effect. A significant positive effect is identified on the 'Cultural heritage, architecture and archaeology' objective because of the contribution that can be made to conserving the built environment through re-using materials. This is especially important given the MLP's lack of a landbank for building stone. The 'Waste' objective also records a significant positive effect, as the MLP's strong support for the re-use of waste materials accords with the waste hierarchy. No overall effects on economic and growth objectives are predicted, as the economic opportunities from secondary minerals provision could displace those associated with primary minerals. The provision of reclaimed building materials could have a minor positive effect on housing and the environment in which housing is located. No other significant effects have been identified.

### **Policy MLP 8 Steady and Adequate Supply of Sand and Gravel**

- 5.7.4 This policy does not affect how or where development should take place, meaning that significant effects on environmental objectives cannot be identified. Providing adequate sand and gravel is critical to conserving the built environment, and so a minor positive effect is identified on the 'Cultural heritage, architecture and archaeology' objective. The policy's support for enhancing productive capacity should enable resource efficiency, leading to minor positive effects on the 'Material assets' and 'Climate change and energy' objectives. The policy also has positive effects on 'Traffic and transport', as providing for

indigenous supplies will reduce the need for transport of materials from outside the county. SA objectives on development should see positive effects as a result of the policy making provision for the materials necessary to deliver Worcestershire's housing, economic growth, and infrastructure.

- 5.7.5 The MLP states, at paragraph 6.25, that "*Those applications within the Wildmoor Formation should also consider whether silica sand is likely to be present, in which case the requirements of Policy MLP 11 may apply*". It is unclear whether this sentence is introducing a robust technical requirement (in which case it would be better within the policy) or is merely informal guidance. Greater clarity should be provided on the approach to applicants' silica sand assessments within the Wildmoor Foundation.
- 5.7.6 The policy wording could be improved, such that "*Proposals will be required to demonstrate that the proposed development will...*" becomes "*Proposed developments will be required to demonstrate that they will...*" This also applies to other MLP policies, where relevant.
- 5.7.7 Expressing the reserves/target landbank as a range in the reasoned justification is unhelpful, especially when expressed as minimum.

#### **Policy MLP 9 Steady and Adequate Supply of Crushed Rock**

- 5.7.8 This policy does not make provision for significant amounts of crushed rock. In specifically avoiding the AONBs, it can help to safeguard the landscape, and therefore should have a minor positive effect on the 'Landscape' SA objective. Minor negative effects on the 'Cultural heritage, architecture and archaeology' objective are predicted, however, because a zero landbank risks a lack of available materials to enable conservation of the historic environment. Such a low target, conversely, can help to reduce the likelihood of development, and thereby reduce the risk of carbon emissions, although this could be displaced if material is imported from outside the county. The zero landbank could require more transport movements than would otherwise be necessary if crushed rock has to be imported. The policy could also have minor negative effects on the growth objectives, as crushed rock is needed for housing, infrastructure and economic development.
- 5.7.9 The 'maintaining' element of the policy's requirement for proposals to demonstrate that they will be "*increasing or maintaining Worcestershire's landbank of permitted reserves*" fails to reflect the level of the landbank; the reasoned justification states at paragraph 6.30 that "*There is no landbank of permitted reserves for crushed rock in Worcestershire*" and at paragraph 6.31 that "*crushed rock 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*". On a literal reading, therefore, the policy is requiring proposals to demonstrate how they contribute to maintaining no resource. It is recommended that only "*increasing*" is used, to ensure the greatest encouragement for crushed rock provision within the county.

#### **Policy MLP 10 Steady and Adequate Supply of Brick Clay and Clay Products**

- 5.7.10 No effects on landscape and biodiversity and geodiversity have been identified, as the policy does not guide how or where development will take place. A minor positive effect on the 'Cultural heritage, architecture and archaeology' objective is likely, as the provision of bricks and clay will be important in preserving and enhancing the historic

environment. The policy's support for enhancing productive capacity should enable resource efficiency, leading to minor positive effects on the 'Material assets' and 'Climate change and energy' objectives. Providing sufficient resources should also have a positive effect on transport, by reducing the need to import materials longer distances, and on the development objectives, through providing the essential materials to enable growth and housing to be delivered where and when required.

- 5.7.11 It is unclear why the policy wording includes the term "clay products", as it is the supply of raw material that the policy seeks to facilitate. If the products themselves are to be included, then part (a) of the policy should include them for completeness.

### **Policy MLP 11 Steady and Adequate Supply of Silica Sand**

- 5.7.12 No effects on landscape, biodiversity and geodiversity, and cultural heritage have been identified, as the policy does not guide how or where development will take place. The policy's support for enhancing productive capacity should enable resource efficiency, leading to minor positive effects on the 'Material assets' and 'Climate change and energy' objectives. Providing sufficient resources should also have a positive effect on transport, by reducing the need to import materials longer distances, and on the economic development objective. The effect on housing is less certain, as the MLP does not include house building as a use for silica sand.

### **Policy MLP 12 Adequate and Diverse Supply of Building Stone**

- 5.7.13 No effects on landscape, biodiversity and geodiversity have been identified, as the policy does not guide how or where development will take place. A minor positive effect is identified in relation to the 'Cultural heritage, architecture and archaeology' objective, as building stone is important in enabling the preservation and enhancement of the historic environment. The policy's support for enhancing productive capacity should enable resource efficiency, leading to minor positive effects on the 'Material assets' and 'Climate change and energy' objectives. Providing sufficient resources should also have a positive effect on transport, by reducing the need to import materials longer distances, and on housing (although the use of building stone will be specific to certain types and locations of housing). No effect has been identified on the growth SA objective, as building stone is not considered such an essential component of economic growth and infrastructure development.

### **Policy MLP 13 Supply of Other Locally and Nationally Important Industrial Minerals**

- 5.7.14 As there is currently no information on the type, location, or scale of development needed to deliver these resources, the effects on most SA objectives are uncertain. Minor positive effects have been identified on transport and growth, as the provision of such materials can prevent unnecessary imports and can enable economic development if and when such minerals are required for industrial uses within the county.

## Policy MLP 14 Supply of Energy Minerals

- 5.7.15 Because this policy is more restrictive than the other 'Steady and adequate supply' policies, it is easier to predict minor positive effects on the environmental SA objectives; while a lack of development would mean that the potential gains arising from GI-led restoration would not be realised, the avoidance of risk (in line with the precautionary principle) is considered more important. This policy is likely to have a significant positive effect on the 'Climate change and energy' objective, by restricting the winning (and subsequent use) of polluting fossil fuels. It will also have a minor positive effect on health and amenity. Some of these will be secondary effects, but the pathways and linkages are sufficiently clear to allow for a confident prediction. Minor negative effects have been identified on the growth SA objective, as the restrictive policy could prevent local employment in the energy industry. A further indirect impact could be increased prices for energy customers. The policy supports a minor positive effect on the technology objective, as a restriction on hydrocarbon energy should help to encourage a shift to lower-carbon alternatives.
- 5.7.16 There is a degree of duplication between the wording in the introductory section of part (b) and the more detailed provision in part (b)(iii) of the policy.

## 5.8 Development management

- 5.8.1 Most of the protection and enhancement policies state at the beginning that permission will be granted for development that "*protects and enhances*" the particular features/assets in question. But the policies then invariably move to tests that, in large part, seek a lower threshold of simply minimising and/or mitigating harm. This can create the impression of undermining, to an extent, the positive initial statements, by the less positive content in the detailed provisions/criteria. Although greater positivity would be welcomed, a simple re-ordering would also help, such that those parts of the policies that call for enhancement (which are generally at the end of the policies) become the first in the list, with the more negatively-framed aspects coming afterwards. Perhaps the most positive policy is *Policy MLP 17 Access and Recreation*, which calls for the optimisation of opportunities to improve public access networks, and enhancement of routes where permanent diversions are necessary. This tone would be welcomed throughout the document, and would help to ensure that the SA objectives are met more fully.
- 5.8.2 There is currently no policy on the Green Belt, and consideration should be given to including a policy to ensure the continued protection of the West Midlands Green Belt within Worcestershire. Whilst the NPPF allows that "*minerals extraction*" is not inappropriate in the green belt, this is not an unqualified allowance; the policy states that "*Certain other forms of development [including minerals extraction] are ... not inappropriate in Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in Green Belt*" [emphasis added]. There is also a question over what constitutes "*minerals extraction*", as certain associated buildings may not necessarily qualify as such, and would be subject to normal green belt safeguards. A dedicated policy on the green belt would allow the MLP to perform better against SA objective 4 'Material assets', in particular.

- 5.8.3 The development management policies do have the potential to produce cumulative effects. The detailed provisions of many of the policies (parts a, b, c, etc.) are to be read as complementary. There is generally a provision to require the "optimisation" of, for example, green infrastructure or the historic environment, but there are also provisions to "not cause unacceptable harm or loss" to assets. The assumption is that some degree of minor negative effect on certain assets may be acceptable, providing the overall effect is positive. This does raise the potential of multiple minor negative effects occurring across multiple sites which, individually, may be acceptable for the 'greater good'. But if sufficient minor negative effects occur, there is a risk that this could begin to more seriously erode the assets' overall strength. This will be most marked where the assets experiencing negative effects are of a different type or in a different location to those assets that will see significant benefits from the "optimising enhancement" approach; there could be a risk that certain areas or types of asset, in isolated areas or groups, collectively experience more than "acceptable" harm through incremental losses and erosion of quality.

### **Policy MLP 15 Sustainable Design Principles**

- 5.8.4 This policy is likely to have positive effects on the environmental SA objectives, although the focus is more on safeguarding than strengthening. Significant positive effects are predicted for the 'Climate change and energy', 'Flooding', and 'Waste' objectives, as there are specific positive approaches included in the policy. A minor positive effect is identified on health and amenity. That part of the housing objective that calls for "decent housing ... in clean, safe and pleasant local environments" is also supported by this policy.
- 5.8.5 There is no requirement within the MLP for a proportion of a minerals site's energy use to be met from on-site renewable energy. This is a well-established mechanism used in many Local Plans to encourage not just greater renewable generation, but also the minimisation of energy usage (the smaller the development's energy usage, the smaller the actual amount of renewable energy required). The Waste Core Strategy includes such a requirement in its Policy WCS 11 'Sustainable design and operation of facilities', and it is recommended that consideration is given to including a similar requirement within the MLP in Policy MLP15.

### **Policy MLP 16 Health and Quality of Life**

- 5.8.6 This policy should have minor positive effects on the environmental SA objectives. Indirect benefits to the 'Waste' and 'Traffic and transport' objectives are also likely. That part of the housing objective that call for "decent housing ... in clean, safe and pleasant local environments" is also supported by this policy.
- 5.8.7 Consideration should be given to seeking actual enhancement of health and quality of life, as well as mitigation of harm, within this policy. This would encourage positive outcomes and would better accord with the SA objectives (in particular objectives 5 and 9).
- 5.8.8 The policy could also make clear that it applies to all stages of a minerals development, including operation and restoration (in a similar way to part (a) of *Policy MLP 20 Agriculture and Soils*). The policy itself does not necessarily give this impression, but it is clear from the reasoned justification (notably at paragraph 7.86) that this is the case.

- 5.8.9 Criterion (h), covering 'health and wellbeing', should be removed, as the entire policy is concerned with health and wellbeing. The purpose of the criteria is to divide this overarching topic into discrete parts. Having the main issue itself as one of the criteria is illogical and undermines the structure of the policy. The supporting text at 7.90 explains that part of the health and wellbeing criterion relates to "*decreased air quality or creation of dust emissions*" - each of which is already a separate criterion. The only stated element of health and wellbeing that is not already considered in the criteria is "*access to publicly accessible greenspace*". It is this more specific issue of access that should therefore be listed in the policy or, better still, this criterion should be removed altogether, as the access issue is covered elsewhere in the plan in *Policy MLP 17 Access and Recreation*.
- 5.8.10 Paragraph 7.95 of the reasoned justification gives a list of measures that could reduce or mitigate negative impacts. It may be worthwhile referring to the availability of, and potential to use, quieter vehicles. Although not yet commercially available, electric HGVs do exist and are being tested. Electric HGVs (or other alternatives quieter than conventional diesel-engined vehicles) may become available in the lifetime of the plan and could lead to transport that is not only quieter, but also cleaner.

### **Policy MLP 17 Access and Recreation**

- 5.8.11 The environmental effects of this policy are largely uncertain, as it does not specify the need to safeguard the environment. The green infrastructure element is insufficient to guarantee that environmental effects will not arise. Minor positive effects have been identified in relation to the 'Material assets' and 'Housing' objectives, as the policy will support green infrastructure and "*clean, safe and pleasant environments*". Significant positive effects are predicted on the 'Access to services', 'Health and amenity', and 'Traffic and transport' objectives, as the policy's support for rights of way can provide people with access, improve health, and reduce the need for less sustainable transport movements.
- 5.8.12 Consideration should be given to adding a qualification to the policy wording to require public access networks to be improved "*subject to environmental safeguards*". This would ensure that the policy performed better against the SA objectives (in particular objectives 1, 2 and 3).
- 5.8.13 Unlike the majority of those MLP policies that require the integration of "*other green infrastructure components*" as one of the detailed policy criteria (namely *Policy MLP 18 Biodiversity*, *Policy MLP 19 Landscape*, *Policy MLP 21 Geodiversity*, *Policy MLP 22 Water Environment*, and *Policy MLP 23 Historic Environment*), this policy – along with *Policy MLP 20 Agriculture and Soils* – includes this requirement within the 'introductory' text of the policy. Whilst this may not signify a reduced level of importance, it would be logical to use the same approach through the MLP, and therefore move this requirement to a specific criterion within the policy.
- 5.8.14 The repetition between paragraphs 7.96 and 7.100 should be removed.
- 5.8.15 Further clarification is needed over the meaning of paragraph 7.105.

## **Policy MLP 18 Biodiversity**

- 5.8.16 This policy is predicted to have positive effects on all of the environmental objectives. In particular, it is likely to have significant positive effects on 'Biodiversity and geodiversity', although the focus is more on protection than enhancement. There are also positive effects on the access and health objectives, due to the green infrastructure linkages supported by the policy. A minor positive effect on housing is identified as result of the policy's ability to contribute to "*clean, safe and pleasant local environments*".
- 5.8.17 This policy sets out to "*achieve biodiversity net gain*", but parts (a) to (e) seek only to minimise harm, and recognise that there may be losses (albeit minimised) in specific circumstances. The policy allows that such losses are more than made up for through achieving overall net gain, but it is only with part (f) that the policy adopts a more positive stance and actually seeks net gain. As currently drafted, the policy allows for a degree of harm to the most important biodiversity assets - those designated/priority sites included in parts (a) to (e) – whilst seeking net gain only for "*habitat networks*" and "*other green infrastructure components*", which may or may not be of equal importance to the designated sites. A more positive approach could seek net gain across all areas and for all assets, whilst also recognising that minimising loss may be the only practical solution in some cases. This would lead to the policy performing better against the SA objectives, in particular objectives 1, 2 and 3.
- 5.8.18 Notwithstanding the point above, although all parts of the policy are equal, it would help to reinforce the positive, net gain approach if part (f) was moved to become the first in the list.
- 5.8.19 The policy text should be amended to refer to "*A level of technical study appropriate to the biodiversity feature(s)*" rather than "*feature*" singular.
- 5.8.20 Table 7.1 at paragraph 7.113 lists two categories of international heritage designations: "*World Heritage Sites and candidate sites*" and "*Any heritage assets of international significance*". It is unclear what this second category might include. If it does not include anything that is not already covered in the first category, this should be deleted to avoid confusion. The same applies to other similar categories, such as "*Any internationally designated or protected habitats*".
- 5.8.21 Table 7.1 should include the full wording of SAC and SPA before using the acronyms, to match the treatment of the various other designations in the table. It is also unclear why acronyms are given for some assets (BAP, HER, SSSI, etc.) but not for others (Local Nature Reserves, Local Geological Sites, Local Wildlife Sites, etc.).
- 5.8.22 The row headings in Table 7.1, whilst appropriate for non-biodiversity assets, introduce an artificial distinction in some cases. SACs and SPAs, for example, are habitat designations, and as such it is unclear why they are in the first column.

## **Policy MLP 19 Landscape**

- 5.8.23 This policy is predicted to have positive effects on all of the SA's environmental objectives (apart from climate change, for which the effects are uncertain, as a result of the potential restriction on renewable energy and the support for green infrastructure). A significant positive effect is identified on the landscape objective, and references to



landscape character and local distinctiveness are welcomed. These aspects also mean that the policy is likely to have significant positive effects on the 'Cultural heritage, architecture and archaeology' objective, as landscape is a crucial part of the cultural and historic environment and its setting. Positive effects are also likely on the housing objective, as a high-quality landscape is a valuable part of a pleasant local environment.

- 5.8.24 Although all parts of the policy are equal, it would help to reinforce a positive approach if part (c) was moved to become the first in the list.
- 5.8.25 Consideration could be given to distinguishing the impacts of a site at the different stages of operations and restoration.
- 5.8.26 Paragraph 7.136 refers to proposals within the setting of the AONB, but does not refer to proposals actually *within* the AONB. The plan should recognise the potential for such development (and does so elsewhere, including in paragraph 7.172). The approach in paragraph 7.136 is slightly at odds with paragraph 7.138, as national policy only requires exceptional circumstances for development in the AONBs. The NPPF does not have such a requirement for development that is only within the setting of AONBs.
- 5.8.27 It may be worth qualifying in the final bullet point of paragraph 7.144 that interpretation boards would only be appropriate in certain circumstances and in certain locations, and may not necessarily be desirable in all cases. If inappropriately sited, they could cause visual intrusion and have negative impacts on biodiversity.
- 5.8.28 Many of the policies (*Policy MLP 17 Access and Recreation, Policy MLP 18 Biodiversity, Policy MLP 20 Agriculture and Soils, Policy MLP 21 Geodiversity, Policy MLP 22 Water Environment, and Policy MLP 23 Historic Environment*) require the integration of other green infrastructure components "*where appropriate*". This policy, however, omits these qualifying words, and it is unclear if this is deliberate and - if so - the reasoning behind the omission.

### **Policy MLP 20 Agriculture and Soils**

- 5.8.29 Many of the effects of this policy are uncertain, as the stripping and storing of soils could both compromise and offer opportunities for the landscape, biodiversity and geodiversity, and cultural heritage, architecture and archaeology. It is likely to have a positive effect on the 'Material assets' objective, as it seeks to safeguard best and most versatile agricultural land. The policy's approach to minimising soil movement should help to ensure that soil remains available as a valuable carbon store, thereby leading to minor positive effects on the 'Climate change and energy' objective. The stripping and storing of soils could help to protect sensitive receptors, including housing, from effects such as noise and visual impact, but could alternatively introduce new impacts where none existed before. The effects on 'Health and amenity' and 'Housing' are therefore uncertain.
- 5.8.30 The majority of similar MLP policies require the integration of "*other green infrastructure components*" as one of the detailed policy criteria (namely *Policy MLP 18 Biodiversity, Policy MLP 19 Landscape, Policy MLP 21 Geodiversity, Policy MLP 22 Water Environment, and Policy MLP 23 Historic Environment*). This policy, however, along with *Policy MLP 17 Access and Recreation*, only includes this requirement within the policy's 'introductory' text that precedes the detailed criteria. Whilst this may not signify a reduced level of importance,

as it is still within the policy itself, it would be logical to use the same approach throughout the MLP, and therefore move this requirement to a specific criterion within the policy.

- 5.8.31 The conservation of soil resources should help to ensure that soils and other arisings are managed on site, thereby reducing the need to move them elsewhere. The policy itself, however, does not specifically state that on-site management is preferable to off-site management. This distinction could have implications on traffic movements and, in order to accord more fully with SA objective 11, the policy should clarify this position. The reasoned justification, at paragraph 7.155, states that "*Planning applications should demonstrate how best practice measures for soil handling and storage will be achieved on site*". This is ambiguous, in that it may only be seeking best practice for whatever amount of soil is on site, rather than actually requiring that soil be managed on site, where possible. A more useful explanation is provided in paragraph 7.36, which says that "*Soils and overburden should be retained on site for restoration and maintained as part of the green infrastructure of the site throughout operations*".

### **Policy MLP 21 Geodiversity**

- 5.8.32 This policy is likely to have minor positive effects on the SA's environmental objectives. The focus, however, is primarily on minimising negative effects, rather than securing net gains in the quality and quantity of geodiversity assets. As such, it fails to provide a likely significant positive effect on the 'Biodiversity and geodiversity' SA objective. The policy concerns a fairly specific issue and, therefore, apart from the key linkages arising through green infrastructure, no other effects have been identified as likely to result from this policy.
- 5.8.33 Greater emphasis could be given to improving the number and condition of geodiversity assets. This would allow the policy to perform better against SA objective 2.
- 5.8.34 Part (d) of the policy should be amended to become "*will optimise opportunities to improve the condition, legibility and understanding of geodiversity, integrating other green infrastructure components where appropriate*". This would allow the policy to accord more fully with SA objective 3.
- 5.8.35 Although all parts of the policy are equal, it would help to reinforce a positive approach if part (d) was moved to become the first in the list. Consideration could also be given to seeking to improve the number of geodiversity assets to ensure net gain of both quality and quantity.
- 5.8.36 Consideration should also be given to seeking greater access to, as well as interpretation of, geodiversity, where appropriate. This would allow the policy to accord more fully with SA objective 8.
- 5.8.37 The policy text should be amended to refer to "*A level of technical study appropriate to the feature(s)*" rather than "*feature*".

## **Policy MLP 22 Water Environment**

- 5.8.38 This policy is likely to have minor positive effects on the environmental SA objectives. Significant positive effects are likely on the 'Flooding' objective, as might be expected, although the policy could be strengthened by seeking to achieve flood betterment, as mineral sites may offer opportunities to improve flood storage. Consideration should therefore be given to including within the policy the potential of active and restored minerals sites to positively contribute to increasing flood storage, thereby reducing flood risk elsewhere (rather than simply avoiding increasing risk). This could be achieved by modifying criterion (a) such that it begins [the proposed development] "*will reduce or avoid increasing flood risk....*"
- 5.8.39 The 'Access to services' objective is also likely to see positive effects, as preventing flooding from threatening neighbouring uses can help to ensure routes remain open and that facilities are not compromised by flooding caused by mineral operations. The policy is also likely to have a positive effect on health through the protection of groundwater resources.
- 5.8.40 In paragraph 7.178, the list of what is included in the "*water environment*" mixes types of physical feature with policy designations, which is unhelpful, especially as these policy designations may or may not be within the natural features referred to. It is recommended that source protection zones and nitrate vulnerable zones are included in a standalone sentence.
- 5.8.41 The policy text should be amended to refer to "*A level of technical study appropriate to the relevant water feature(s)*", rather than "*feature*" singular.
- 5.8.42 Although all parts of the policy are equal, it would help to reinforce a positive approach if part (d) was moved to become the first in the list.

## **Policy MLP 23 Historic Environment**

- 5.8.43 This policy is likely to have positive effects on the environmental objectives, in particular the 'Cultural heritage, architecture and archaeology' objective. As the historic environment can make a valuable contribution to "*safe and pleasant local environments*", it should also have a positive effect on the housing objective.
- 5.8.44 The policy text should be amended to refer to "*A level of technical study appropriate to the heritage asset(s)*", rather than "*asset*" singular.

## **Policy MLP 24 Transport To and From Site**

- 5.8.45 The policy is predicted to have minor positive effects on the SA's environmental objectives through its specific protection afforded to the environment. The role that transport infrastructure can play in reducing flood risk is not recognised, and the likely effect on flooding is uncertain. It will have only a minor positive effect on the 'Traffic and transport' objective, however; it is focused almost wholly on movement of minerals and overlooks the movement of people, for which transport by road – ideally by low-carbon means – may be the most sustainable and only viable option. In recognising the potential

for transport movements to compromise "*clean safe and pleasant local environments*", the policy also has minor positive effects on the 'Housing' objective.

- 5.8.46 Consideration should be given to strengthening references to the role of transport networks in contributing to green infrastructure. The potential for transport routes to play a key role in green infrastructure, particularly for biodiversity and water management, is well known, and this potential is recognised in the reasoned justification at paragraph 7.228. It would improve performance against many of the SA objectives – in particular objectives 1, 2, 3, and 4 – if green infrastructure opportunities were included within the policy (as they are in many of the other policies). This could also include opportunities to contribute to flood reduction/retention, which would benefit SA objective 7.
- 5.8.47 The policy could better distinguish between the movement of materials and the movement of people, and recognise that the sustainability and desirability of 'road transport' will vary according to the mode employed and the user. Consideration should be given to the needs of employees and visitors. This is currently covered most obviously in part (d), but this seeks arrangements that are merely "*adequate*" and "*safe*". These are low standards, and the policy could be more positive in supporting sustainable modes. Strengthening the policy on this issue would help it to better accord with many of the SA objectives, and in particular objective 11.
- 5.8.48 The policy could potentially offer greater support to new technologies in helping to achieve transport improvements. Safety, noise, and emissions could all potentially be improved through existing and emerging technologies, such as electric vehicles. Recognition and support for more sustainable technologies would allow the policy to better accord with SA objective 15.

### **Policy MLP 25 Transport Within Mineral Sites**

- 5.8.49 This policy is predicted to have minor positive effects on the environmental objectives. The effect on health and amenity is uncertain at this stage, as this will depend on specific circumstances; conveyors may be quieter than dump trucks, but if dump truck movements were sporadic, such noise may be more acceptable than a constant but lower-volume option. The policy should have a significant positive effect on the 'Traffic and transport' objective, as it supports the objective's move towards more sustainable travel patterns. The policy would be strengthened by seeking a reduction in travel in the first place. This would allow the policy to perform better against many SA objectives, most notably objective 11. Minor positive effects are also predicted for the 'Housing' objective, as the policy requires transport movements within sites to minimise the potential for adverse impacts and to optimise the opportunities for green infrastructure. This should contribute to the creation and maintenance of "*clean, safe and pleasant local environments*".
- 5.8.50 Lack of detail means it is difficult to appraise the likely impacts of this policy. Moving the criteria in paragraph 7.235 of the reasoned justification so that they appear within the policy may help, but the policy would still be very broad.
- 5.8.51 Paragraph 7.185 of the reasoned justification notes that "*buildings and processing plant should not be located in the flood plain*". It is unclear whether some elements of transport

infrastructure within the site - such as conveyors – may fall within these categories. This should be clarified.

### **Policy MLP 26 Sustainable Development Delivery**

- 5.8.52 No specific effects arising from this policy have been identified on any SA objective. While developer contributions may support various aspects of sustainable development, this will depend on the specific circumstances in each case.
- 5.8.23 The title of Policy MLP 26, "Sustainable Development Delivery", is unnecessarily ambiguous. The policy is wholly concerned with planning obligations, and should be titled accordingly.
- 5.8.24 It appears that parts (a), (e) and (f), at least, actually fall within part (c), and that with slightly amended wording, part (c) could include all of the provisions (a)-(f).

## **5.9 Safeguarding minerals and supporting infrastructure**

### **Policy MLP 27 Safeguarding Locally and Nationally Important Mineral Resources**

- 5.9.1 The restrictive nature of this policy means that minor positive effects on the environmental SA objectives can be predicted. While a lack of development would mean that potential gains from GI-led restoration would not be realised, the avoidance of risk is (in line with the precautionary principle) considered more important. This policy is likely to have a significant positive effect on the 'Material assets' objective, which calls for the safeguarding of reserves. The SA has queried whether the justification for only protecting minerals that are of 'economic value' is sufficiently made. The effect on transport is likely to be positive, as a result of development being less likely and thereby the need for travel being reduced. Conversely, development that is restricted by this policy may occur elsewhere, in a location that is less sustainable in transport terms than one within a safeguarding area. For those SA objectives concerned with growth and development, minor positive effects have been identified as a result of the need to extract minerals of economic value, thereby supporting the economy and providing the materials needed for building. The policy could also, however, prevent the delivery of economic development and housing, or otherwise lead to additional costs and delays.
- 5.9.2 While the policy title concerns "*locally and nationally important*" mineral resources, the actual policy tests seek to protect those mineral resources that are "*economically valuable*". The policy therefore equates the two terms. There is a risk that this could overlook the wider, longer-term importance of minerals in a social and environmental context. Paragraphs 8.6-8.9 of the reasoned justification define "*locally and nationally important*" mineral resources as a matter of physical fact, according to where resources exist. The economic value of minerals, by contrast, is not fixed; paragraph 8.16 of the reasoned justification notes that "*a lack of interest from mineral operators to work the mineral resource will not be considered to be sufficient evidence that the resource is not of economic value for the future*" and, to an extent, it is impossible to predict what will or

will not be an economically valuable resource in years to come. Care is therefore needed to guard against resources that are not currently economically valuable being dismissed as having no value of any kind. Paragraph 8.18 also suggests that it may not be solely economic value that determines which resources should be protected, as it states that *"the particular qualities of the resource may mean that it is strategically or economically significant"* [emphasis added].

- 5.9.3 There is a need to ensure that the Mineral Planning Authority is adequately resourced to be able to effectively determine developers' economic assessments, which may require specialist skills.
- 5.9.4 An explanation of how the area of Mercia Mudstone Group brick clay referred to in paragraph 8.6 was selected would be helpful. The footnote states only that this area was *"Proposed for safeguarding by Wienerberger Ltd. The Mercia Mudstone Group is extensive in Worcestershire and comments received on the Second Stage Consultation on the Minerals Local Plan indicated that it would not be appropriate to safeguard the whole of the formation"*. Further detail on the evidence underpinning the safeguarded area should be provided, including consideration of how this accords with the description in paragraph 8.7 that the safeguarding areas include *"resources which fall outside of the Strategic Corridors, as they could be valuable resources for the future even though they are not the preferred resources to achieve the objectives of this Minerals Local Plan"*.
- 5.9.5 The reasoned justification states, at 8.20, that *"Where some or all of the mineral resource is to be extracted ... Consideration from the outset could offer opportunities to deliver high quality design through appropriate landscaping, the integration of physical features and green infrastructure into site design"*. This appears in the text immediately after two obvious benefits of extraction (providing raw building materials, and an additional source of income), with the possible implication that landscape change, too, is beneficial. Whilst there is likely to be a degree of change to the landscape from working mineral resources before another development occurs, there is no evidence provided to suggest that this change would be positive.

### **Policy MLP 28 Safeguarding Permitted Mineral Sites and Supporting Infrastructure**

- 5.9.6 The effects of this policy are similar to those identified for Policy MLP 27 Safeguarding Locally and Nationally Important Mineral Resources, although there is a difference in how each policy relates to the 'Material assets' SA objective; this policy is predicted to have an uncertain effect, as it could potentially support those parts of the objective that seek to safeguard best and most versatile agricultural land and Green Belt, but this will depend on the location of the particular development proposal. There is a minor risk that the policy could compromise the objective's maximisation of previously-developed land and buildings if the land and buildings were in close proximity to minerals sites and infrastructure.
- 5.9.7 The wording of the policy gives full consideration to the potential effects of new development on the continued operation of mineral sites and infrastructure, but does

not address the possibility of existing mineral site(s) and/or supporting infrastructure having a negative effect on new development. This is discussed in the reasoned justification, but does not form part of the policy. Consideration could be given to including within the policy the need for any proposed development to assess the likely impact of current and potential future operations at minerals sites/infrastructure on sensitive receptors that may not yet exist, but would arise as a result of non-exempt development (such as residents moving into homes proposed near to an existing minerals site).

## 5.10 Implementation and monitoring

- 5.10.1 This chapter of the MLP does not include any policies, nor does it directly shape the type or location of development. As such, it does not raise any direct sustainability issues, although the SA has identified certain issues which should be taken into account.
- 5.10.2 Paragraph 9.4 states the importance of cooperating with "neighbouring mineral planning authorities on the cross-boundary implications of mineral development". This should also include liaison with those further afield, as it may be necessary to consider the sub-national or even national relationship with other authorities.
- 5.10.3 The proposed monitoring framework sets out a comprehensive and effective means of evaluating the performance of the MLP and includes proposed measures to address any reasonably foreseeable problems that may arise.
- 5.10.4 The flow-chart at Figure 9.1 lists "*Short-term*", "*external*", or "*insignificant*" factors as causes of failure that would require no action. While the first and last of these may not require action, the nature of "*external*" factors is unclear. Various factors could arise that would require action from the MPA (for example, an operator's business decision that would compromise the ability to deliver the county's mineral requirements).
- 5.10.5 The lists of responsible bodies in the monitoring schedule could include mineral site owners, agents, and operators. Although they are not accountable for plan delivery per se, they will be crucial in successfully delivering the plan, and if their role is not recognised under this category, they could be included in another 'delivery' category.

## 6 EVOLUTION OF THE MLP AND REASONABLE ALTERNATIVES

### 6.1 The evolution of the MLP

- 6.1.1 The following section seeks to 'tell the story' of how the current MLP approach has been developed. It records the alternatives that have been considered through the MLP and SA, and records the reasons why they were rejected or taken forward.
- 6.1.2 Production of the Minerals Local Plan began with a 'First Stage Consultation' during the autumn/winter of 2012/13. This early consultation was based on a series of background documents which provided evidence on what sort of minerals might be needed in Worcestershire, in what quantities, and considered how they might be worked. This consultation was accompanied by the first stage of SA, which was the Scoping Report.
- 6.1.3 The 'Second stage Consultation' MLP was published for consultation between autumn 2013 and spring 2014. This document built on responses received on the first consultation to provide a clearer direction of minerals working in Worcestershire. It set out the likely scale of minerals that the plan would need to provide for, and ways in which these targets could be met. It also set out the key issues in a more accessible way 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 that would come at a later stage. It also proposed "*areas of search*" for aggregates and an "*opportunity area*" for clay, as well as ideas for how mineral workings in these areas should be restored. Options for how minerals could be safeguarded were also included. This consultation was accompanied by an 'Initial SA Report', which sought to appraise the emerging options in order to inform the next stage of MLP preparation.
- 6.1.4 In the summers of 2014 and 2015, Worcestershire County Council undertook two further consultations. These were 'calls for sites', designed to help identify potential locations where landowners and minerals operators may wish to deliver minerals development. These consultations were not accompanied by any SA documents, as they were part of the technical evidence base to inform the current Third Stage Consultation, and their findings have been reflected in the latest consultation, which is accompanied by a full SA Environmental Report (this document).
- 6.1.5 Throughout the evolution of the MLP, the approaches to the vision, objectives, and policies have been refined according to the changing evidence base, consultation responses, and SA recommendations.



## **6.2 How reasonable alternatives have been considered in the MLP and in the SA**

- 6.2.1 The SEA Directive requires this Environmental Report to provide "*An outline of the reasons for selecting the alternatives dealt with*". The following sections set out the reasons for selecting or rejecting various alternatives as the MLP has developed.
- 6.2.2 The Third Stage Consultation Minerals Local Plan includes a "*Developing the Third Stage Consultation*" section at the end of every chapter (apart from the Introduction and Implementation and monitoring chapters). These sections also provide a useful summary of how the MLP has developed.

## **6.3 Evolution of the 'Portrait of Worcestershire'**

- 6.3.1 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. Nevertheless, it plays a role in setting the context for the MLP, and helps to explain some of the issues underpinning the policy decisions found later in the plan.
- 6.3.2 The Second Stage Consultation included a short Portrait of Worcestershire that summarised key facts and figures about the county and provided some very high-level information about minerals in Worcestershire and minerals extraction. It was a very short section, spanning only five pages.
- 6.3.4 The Third Stage Consultation MLP states that "*The chapter retains broadly the same structure as the Second Stage Consultation on the Minerals Local Plan but is much more detailed, particularly with regard to the specific mineral resources in Worcestershire. Explicit reference has also been made to health and well-being*".
- 6.3.3 The SA considered the Portrait of Worcestershire at Initial SA Report stage and identified some issues that could be strengthened. As a result, the revised Portrait in the Third Stage Consultation MLP includes references to the importance of horticulture; the challenges of the county's ageing population; the poor performance of the county's water courses in failing to meet Water Framework Directive targets; and the role of economic and environmental partnerships.
- 6.3.4 There are also some issues that the previous SA recommended the Portrait should recognise, that have not been addressed (the demand for affordable housing, the role of Neighbourhood Plans and other community initiatives; and the successes of partnership working). None of these issues is considered to significantly detract from the Portrait, but consideration could be given to referring to them in the next edition of the MLP.

## **6.4 Evolution of the 'Vision and objectives'**

- 6.4.1 As with the Portrait, 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. The previous SA observed that not including a Vision would not be a reasonable alternative, as the vision is required by the NPPF. 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.

- 6.4.2 The Second Stage Consultation MLP built on consultation responses that called for various policies, strategies, and characteristics of Worcestershire to be recognised in 'key issues' that would in turn help to determine the vision and objectives.
- 6.4.3 The vision of the Second Stage Consultation MLP succinctly set out the reasons why minerals are important, and the contribution that minerals development could make to Worcestershire's economy. It set out the levels of minerals that would be needed, and the role that restoration could lay in delivering environmental outcomes.
- 6.4.4 The vision has been refined in the Third Stage Consultation MLP as result of consultation feedback and recommendations made in the Initial SA Report. The SA recommended that greater local specificity be given to the vision and objectives. It suggested that 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. The SA also called for the vision to reflect the need to mitigate and adapt to climate change, reduce energy and water consumption and maximise sustainable transport. 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. It suggested that secondary and recycled materials should be "*maximised*" rather than just "*encouraged*", and this has been achieved by new wording in the vision which refers to "*making the best use of*" such resources.
- 6.4.5 Other key changes to the vision since the Second Stage Consultation MLP include the approach to timescales for providing minerals (the latest version provides greater certainty that a landbank of sand and gravel reserves will be reached by 2025) and the approach to expressing minerals requirements. These changes have arisen as a result of consultation feedback and the need to reflect changes to the evidence base.
- 6.4.6 The Second Stage Consultation MLP also introduced objectives. These were based on the key issues that emerged from an evidence base review and consultation responses on the First Stage Consultation. A series of eight draft objectives were proposed, covering: the supply of minerals over the plan period; the long-term sustainability of this supply; protecting and enhancing Worcestershire's key economic sectors; climate change adaptation and mitigation; climate change resilience; protecting and enhancing the environment; protecting and enhancing health and amenity; and effective community involvement.
- 6.4.7 The Initial SA recommended more clarity over the minerals supply objectives (1 and 2) and how they related to each other. It also 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. The SA also called for the 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. The SA expressed concern that the economic objective focussed only on "key sectors", rather than the economy as a whole. Doubts were expressed over the inclusion of the Green Belt within the environmental objective. The SA also suggested

that building stone warranted inclusion within the objectives, given then important contribution it can make to maintaining local character.

- 6.4.8 All of the SA recommendations on the draft objectives have been addressed in the Third Stage Consultation MLP, which has also taken into account consultation feedback to develop a more comprehensive suite of 13 objectives.

## 6.5 Evolution of the 'Spatial strategy' and reasonable alternatives

### First Stage Consultation

- 6.5.1 The First Stage Consultation MLP set out Worcestershire County Council's intended approach to determining where minerals extraction should take place "*based on working viable resources in areas where there is the greatest ability to achieve restoration priorities*". Development would be directed to "*broad areas where extraction is preferred*", and restoration priorities would be set out for each of these areas. Criteria-based location policies to assess proposals, and minerals safeguarding areas were also proposed, but no detail was provided on what these would look like. At this stage, the MLP had ruled out identifying specific sites, because allocations in the previous Minerals Local Plan had not come forward, and policy in the NPPF required Mineral Planning Authorities to make provision through "*specific sites, preferred areas and/or areas of search and locational criteria as appropriate*"<sup>24</sup>.

### Second Stage Consultation

- 6.5.2 The restoration-led strategy proposed in the First Stage Consultation MLP was taken forward into the Second Stage Consultation. This developed "*areas of search*" for aggregate minerals, by identifying likely significant resources and seeing where they could be grouped into areas sufficiently large to deliver co-ordinated restoration benefits. The potential of these groupings to serve likely areas of demand was then assessed. A threshold of 200ha (plus a 250m buffer to allow for associated infrastructure) was used to identify clusters of resources, as this was considered to be a scale at which there was realistic potential to deliver strategic restoration benefits through a landscape-scale approach. The Second Stage Consultation reported mixed consultation responses on whether the MLP should allocate specific sites and, for this reason and for those behind the approach in the First Stage Consultation, the MLP opted to maintain an approach of having site-specific criteria and broad areas of search, but no specific sites.
- 6.5.3 Areas of search were only proposed for aggregate minerals. The reasons for not having areas of search for industrial minerals were:
- Building stone is very specific to its location and demand for building stone would, most likely, be for specific conservation purposes. Due to the variation in building stone it was not considered practical or appropriate to identify areas of search. This approach was not considered to compromise delivery of the plan.
  - Clay is found in Worcestershire's Mercia Mudstone, which is known to cover a large area of the county. Unlike sand and gravel, there was insufficient information on this resource to identify the most important areas. As such, only

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<sup>24</sup> Department of Communities and Local Government (2012) National Planning Policy Framework, Paragraph 145

an 'opportunity area' for clay was identified, to show where clay working may be possible. Without sufficient viability evidence, this opportunity area did not constitute an area of search. There was also a 37 year landbank for clay in Worcestershire, which reduced the need to identify additional specific areas/sites.

- Salt and brine were not considered to be workable or commercially attractive due to ground stability and subsidence. No referred locations for salt and brine were proposed.
- Silica sand in Worcestershire is found in solid sand deposits, and at the time of the Second Stage Consultation was principally worked as a source of building sand. Silica sand fell within the areas of search for aggregates.
- Coal resources were identified by the Coal Authority but the resource was small. Evidence suggested that interest in working these resources during the lifetime of the Plan was unlikely. Because of this, and a lack of information to refine the areas of resource, no areas of search were proposed.
- Conventional and unconventional hydrocarbons were not considered likely to be viable. There were no Petroleum Licence Areas in Worcestershire and no history of "conventional" oil and gas, coalbed methane or unconventional hydrocarbons being worked. Coal bearing and shale strata exist in the county, but there was no evidence to suggest they contained such resources. Based on current evidence the county was not considered prospective for coalbed methane. No areas of search for hydrocarbons were proposed to be identified.

6.5.4 Alongside the areas of search, the Second Stage Consultation MLP proposed site-specific locational criteria policies. These would be applied to both aggregates proposals within areas of search, as well as any other proposals not within areas of search.

6.5.5 The Initial SA Report appraised the proposed Spatial Strategy and raised the following main points:

- The reasons why the MLP only referred to certain draft MLP objectives being delivered through areas of search and site-specific location-criteria policies were unclear, as the links were more wide-ranging than were suggested;
- The 200ha threshold for areas of search had not been adequately justified;
- There was a lack of reasoning for why motorways had been excluded from the resource areas;
- Likely demand for minerals could come not only from development set out in Local Plans, but also from sub-national or national infrastructure projects that may rely, in part, on minerals from Worcestershire.
- The design of areas of search to best reflect likely market need – including distance from settlements - would benefit from greater refinement. The three proposed distance buffers, based on the size of development envisaged in Local Plans, were not clearly justified.
- Greater clarity was required over the approach to shale gas extraction, including summarising some of the information contained in MLP background documents that underpins the approach.
- The value of the section on buffers and stand-offs was questioned, as these issues could be better reflected through the criteria-based policies.

6.5.6 The SA considered various alternatives to the approach taken in the Spatial Strategy, and identified whether or not these alternatives might be reasonable, and their likely sustainability effects compared to the plan approach. The alternatives considered were:

- **GI to take an even more central role**  
 The MLP could identify where the greatest opportunities for GI restoration are found, and then align minerals search areas only to the very best GI opportunities, regardless of whether the minerals were otherwise well-located for extraction. Such an approach was not considered reasonable, as it would fail to deliver the long-term minerals supply required under national policy. In sustainability terms, such an approach could have localised benefits in reducing impacts on the natural and historic environment, but would lead to unacceptable climate change impacts from importing minerals into the county and could compromise much-needed social and economic development through restricting supply.
- **Areas of search based on sustainable transport**  
 Areas of search could be identified according to those areas which can best be served by sustainable transport. Although there is some scope for water-borne and rail-borne transport, this was similarly not considered a realistic alternative. As set out in the MLP's Portrait of Worcestershire, "*there are no major rail freight facilities in Worcestershire and limited opportunities for rail freight transport at present*" [water transport is also very limited, although this was not mentioned in the SA at the time]. This would again lead to a failure to provide sufficient minerals, and so would be unreasonable, with similar sustainability impacts to the GI-based alternative above. Another approach could see accessibility to the strategic transport network (such as proximity to motorway junctions) determining areas of search. This would have the benefit of avoiding HGV movements along smaller roads and potentially compromising people's quality of life through noise, dust, vibration and visual impact. It would, however (depending on the criteria used to define what is and is not an acceptable distance from the strategic road network) risk making some of Worcestershire's key and significant resources unavailable for extraction, especially as many of these lie some distance from the county's motorways. The plan's *North West Worcestershire Strategic Corridor* and *Avon and Carrant Brook Strategic Corridor*, for example, are both some distance from the motorway network, but are not inherently unsustainable locations. This would be far too restrictive, and as such is not to be a reasonable alternative.
- **Different thresholds for the sizes of areas of search**  
 The MLP could have proposed cut-offs that were either above or below the 10ha/200ha suggested in the Second Stage Consultation. The merits of either approach would vary; a smaller cut-off could lead to more areas of search being identified, and potentially lead to a greater number of minerals operations taking place. The risk with such an approach would be isolated pockets of development spreading the risk of environmental degradation over many small areas, with no opportunity for joined-up GI enhancement due to the fragmented nature of the sites. Transport requirements could also be significant, as efficiencies of scale would be lost. Potential benefits arising from a smaller cut-off include a reduced magnitude of environmental impacts from smaller sites (such as on air quality, landscape, biodiversity, noise, etc.). A larger cut-off could threaten deliverability, as the ability to identify much larger sites would be limited by existing environmental constraints, and focussing development in a smaller number of areas is unlikely to demonstrate a strong relationship with market demand and final use of the minerals (although further evidence of this would be needed before any categorical judgment could be made). The broad issues raised here

have been considered in a reasonable alternative to the current MLP's spatial strategy, as set out in appendix 2.

- **Identifying site allocations (rather than broad areas of search)**

Site allocations were considered to have the benefit of providing increased certainty for operators and communities over where development is likely to take place. This alternative, however, was not considered to be reasonable; the MLP confirmed that evidence on the precise location and extent of mineral deposits is uncertain, and it was therefore impossible to provide site-specific levels of accuracy. The MLP's proposed approach was considered the most appropriate option, as it provided a degree of indication on the likely areas for minerals development, whilst allowing additional evidence to inform more specific locations as and when it became available through industry or academic research.

### **Third Stage Consultation**

- 6.5.7 The areas of search proposed in the Second Stage Consultation have now been developed into five 'strategic corridors' containing clusters of key and significant mineral resources within coherent landscapes. The corridors reflect the distribution of key and significant sand and gravel and clay resources thought to be of economic value, alongside the potential for mineral development to positively impact on green infrastructure at a landscape scale. As such, the general thrust of the spatial strategy originally proposed in the First Stage Consultation has been maintained, but the reasoning on how areas of search are defined has evolved.
- 6.5.8 The former 200ha threshold is no longer used, as it was considered by consultees and the SA as being too arbitrary. The Third Stage Consultation MLP no longer proposes such rigid thresholds. The corridors are based on analysis of where the greatest gains can be delivered at a cohesive landscape scale, but no precise threshold is given as to the minimum size of viable resource that could constitute a corridor. Similarly, the likely locations of the end use of minerals no longer play a role in determining the areas of search (now the strategic corridors). The reasons for this are set out in the Third Stage Consultation, which states that *"This approach to clustering 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, would make negligible contribution to the delivery of the vision"*. The new approach seeks to rectify this, as the strategic corridors are guided by a combination of where viable resources exist and where there is the ability to make the greatest contribution to green infrastructure. The boundaries follow cohesive landscape types, thereby helping to ensure that any restoration is able to contribute to landscape-scale GI and realise the vision. The plan states that *"Due to the ability of landscape character to encompass and influence many aspects of green infrastructure, and the benefit of precise boundaries established through the Landscape Character Assessment Supplementary Guidance, landscape character was the predominant factor used to identify cohesive clusters"*.
- 6.5.9 Various alternatives to the strategic corridors were considered as part of the plan's development. Not all of these can be considered 'reasonable alternatives' in SEA terms, and so not all of them have been tested through the SA process. It is useful however, to summarise the main issues in order to understand why this is the case and to explain the choices made in the Third Stage Consultation:

- **A different number of strategic corridors**

Five strategic corridors have been established. Alternatives considered included establishing a larger or smaller number of corridors. The corridors are guided by an evidence base and, as such, once the approach has been agreed they are, to an extent, 'self-selecting'. Only certain areas of the county will have known viable resources which fit into clearly-defined landscape character areas. It would have been technically possible to identify two corridors of crushed rock - at the Malvern Hills and at Bredon Hill, respectively - but evidence suggested that these would be unlikely to be deliverable because of environmental constraints (including AONBs) and a lack of industry interest in developing crushed rock in these locations. As such, these crushed rock corridors are not considered to be reasonable alternatives. The basic principle of having smaller corridors, however is considered reasonable, and has been appraised through an appraisal matrix in Appendix 2(b).

- **Different sizes of strategic corridor**

As stated above, once the approach of combining viable minerals resources with the landscape character areas where GI can be maximised is accepted, the corridors are, to an extent, self-selecting. While the 200ha threshold of the Second Stage Consultation has not been continued, it is clear that there is some form of less-defined threshold, which is not explained in detail; some areas of significant resource have not been allocated as corridors, despite falling within cohesive landscape types. This SA considers that additional smaller corridors could be a reasonable alternative, and this is appraised at Appendix 2(b). This appraisal matrix suggests that this alternative could allow local constraints to be better reflected. Designated assets and known areas of concern could be specifically avoided and potentially buffered, to offer greater safeguards for social and environmental issues. In general, this could see positive effects (relative to the MLP's proposed approach) on those parts of the SA objectives concerned with 'safeguarding' or 'preserving', but could potentially have negative effects (relative to the MLP's proposed approach) on those parts which seek 'enhancement'. This is because the joined-up, landscape-scale benefits that are predicted under the corridor profiles are less likely to be realised if corridors are smaller and sites less well connected. The avoidance of specific areas, such as Green Belt and Floodzones, is not considered practical and so, for these receptors, smaller areas could mean losing the benefits of the MLP's corridors without any corresponding benefit from reducing risk.

- **Base strategic corridors on Environmental Character Areas**

Worcestershire's Green Infrastructure Partnership has developed a map of Environmental Character Areas (ECAs). This is a "*strategic level map that provides an interpretation of the Merged Landscape Character Areas, Biodiversity and Historic Environment Base map*"<sup>25</sup>. Priorities have been established for each of the ECAs, which could be used to guide restoration of mineral sites.

The boundaries of the ECAs are not fixed but are, rather, deliberately vague. This makes planning for areas of search more challenging than would be the case if using landscape

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<sup>25</sup> Worcestershire Green Infrastructure Partnership (2012) Worcestershire Green Infrastructure Framework 2

character types, which have clearly-defined boundaries that are, in many cases, easily discernible on the ground. Having fixed boundaries makes it easier to make informed predictions about likely quantities of resource.

The use of ECAs instead of strategic corridors has been appraised as a reasonable alternative in Appendix 2(f). The appraisal suggests that using ECAs could offer some benefits over the strategic corridors. Most notably, development could take place where minerals were found, rather than being restricted by the corridors. This would allow improved performance against the economic SA objectives. The environmental SA objectives would have a similar performance to the corridors, although the historic environment has played a greater role in defining the ECAs than it has in the corridors, and so SA objective 3 could be better served by the ECAs. Without any dedicated restoration priorities for climate change, the ECAs would perform less well than the strategic corridors against SA objective 6.

The SA matrix of ECAs has assumed that there are no corridors of any sort, as there is insufficient guidance for the SA to confidently suggest where these might be. The matrix has therefore been completed as though minerals development could come forward anywhere in the county, but would be guided by the particular approach within each ECA. In reality, it is unlikely such an approach would be used, as this does not lead to 'areas of search'. Alternative corridors that used the ECA boundaries rather than the landscape character boundaries favoured in the Third Stage Consultation are more realistic. Many of the current objectives set out for each ECA are somewhat generic compared to the priorities for the strategic corridors. If the ECA approach were to be progressed, however, these objectives could be refined and made more locally-specific.

- **Base strategic corridors on Biodiversity Delivery Areas**

These are useful tools in identifying areas/opportunities for action from partners but wouldn't have taken minerals potential into account. As such, this is not considered a reasonable alternative.

- **Base strategic corridors on flood catchment**

Flood catchments are too wide, and therefore the GI issues are too varied. This means that effective prioritisation would be difficult, and joined-up benefits would be less likely to be realised. This is therefore not a reasonable alternative.

6.5.10 This SA Report has considered some other alternatives, some of which can be seen as variants of those already discussed:

- **Focus strategic corridors where green infrastructure is in poor condition**

Green infrastructure is vital to the plan, and the vision states that "*Mineral sites will form an integrated part of Worcestershire's multifunctional green infrastructure Network*". 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<sup>26</sup>, which states that "*Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework*".

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. Minerals development could, however, worsen local effects from, for example, noise and visual impact arising from workings and transport movements. It would also fail to achieve cohesiveness across the restoration areas compared to the MLP's proposed strategic corridors. Opportunities to secure enhancements at 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<sup>27</sup>, and would include only a very small fraction of Worcestershire's viable mineral resource. If the 'worst' areas for GI were used, where the overarching GI approach is to 'restore and create', then no minerals resources apart from a negligible proportion of the county's Mercia Mudstone (0.1%) would be included. If the worst areas were combined with the 'medium' areas where the overarching GI approach is to 'protect and restore', this would cover a more meaningful proportion of resources (53% of key and significant sand and gravel; 44% of key and significant solid sand; 11% of key and significant crushed rock; 37% of silica sand; and 31% of Mercia Mudstone) but would be so large in areas that the specific purpose of focussing on those areas where need is greatest would be lost. These proportion, too, are generally below what is provided for within the proposed approach (although crushed rock provision is an issue to consider). 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.

6.5.11 As well as establishing the five strategic corridors, the Third Stage Consultation has established four specific sites and two preferred areas for minerals extraction. This is a departure from the previous two consultation versions of the plan, and reflects consultation feedback on the Second Stage Consultation that the areas of search alone were too broad and failed to provide sufficient certainty for industry or communities. The national Planning Practice Guidance, published after the Second Stage Consultation, also made clear that specific sites should be allocated. The specific sites have been allocated as a result of a deliverability assessment. The preferred areas have been allocated as they do not currently satisfy the deliverability assessment, but have the potential to do so. There are various alternatives to the specific sites and preferred areas:

- **Do not allocate specific sites or preferred areas**

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

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<sup>26</sup> Department for Communities and Local Government (2012), National Planning Policy Framework, paragraph 110

<sup>27</sup> Worcestershire Green Infrastructure Partnership (2012) Worcestershire Green Infrastructure Framework 2, GI Environmental Character Areas Map

developed, so the allocations are no guarantee of development. Not allocating specific sites or preferred options is not a reasonable alternative, as government guidance<sup>28</sup> is clear that "*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): 1.designating Specific Sites ... 2.designating Preferred Areas ... 3.designating Areas of Search*".

- **Allocate a larger or smaller number of specific sites/preferred areas**

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.

## **6.6 Evolution of the 'Steady and adequate supply of mineral resources' and reasonable alternatives**

### **First Stage Consultation**

- 6.6.1 The First Stage Consultation MLP set out the levels of minerals that were thought to be required within the plan period, based on evidence in the Local Aggregates Assessment. This identified a required level of sand and gravel of 18-35 million tonnes; 4-7 million tonnes of hard (crushed) rock; and 5-7 million tonnes of secondary and recycled aggregates. The expression of the levels as ranges reflected the different ways of calculating likely need. It also suggested that there was already a sufficient supply of silica sand and clay, and that neither salt nor coal were likely to be viable.

### **Second Stage Consultation**

- 6.6.2 As a result of consultation feedback and new national planning guidance, The Second Stage Consultation adopted aggregates targets based on past sales. A single number was used, rather than a range, and was expressed as a minimum. As with the First Stage Consultation, targets were not expressed for non-aggregate minerals, as they were either already provided for through a sufficient supply, or were not considered viable. The minimum provision of sand and gravel was given as 1.74 million tonnes between 2015 and 2016 and 10.7 million tonnes between 2017 and 2030. The minimum provision of crushed rock was given as 0.33 million tonnes between 2015 and 2016 and 1.65 million tonnes between 2017 and 2030. Evidence showed that Worcestershire did not have a sufficient landbank of resources to satisfy national policy requirements, and three options for dealing with the shortfall were proposed:
- 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).
  - 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

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<sup>28</sup> Planning Practice Guidance (Revision date: 06 03 2014) Paragraph: 008 Reference ID: 27-008-20140306

million tonnes) and 6.5 years of crushed rock (1.06 million tonnes).

- 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).

The plan's preferred option was Option A.

The Second Stage Consultation maintained the approach to other minerals that was set out in the First Stage Consultation: no levels of provision were to be established, as there was either already a sufficient landbank (for clay), or there was insufficient evidence of viability, or there was evidence that there was no viability (for building stone, coal, oil and gas, shale gas, salt and brine, and silica sand). No levels of secondary and recycled aggregates were established, as this was covered in the Waste Core Strategy.

- 6.6.3 The Initial SA Report appraised options A, B and C. In broad terms, it found that there was greater potential for negative impacts arising from higher levels of resources on the SA objectives for landscape, climate change, natural resources, and biodiversity, geodiversity, flora and fauna. Impacts on geodiversity could vary; increased mineral extraction could potentially destroy or compromise geodiversity resources, but it could also reveal valuable geodiversity assets that would otherwise remain hidden. It found that the historic environment would be best protected through Option C; whilst the higher levels of Option A would help to provide sufficient minerals to help ensure that high-quality development can be delivered in the county, the maintenance of local character and distinctiveness is likely to rely more upon building stone, which was not provided for in this policy. It found that the higher levels of resource in Option A may place additional pressure on agricultural land and the green belt. The most significant negative traffic and transport impacts would result from the larger volumes proposed under Option A, which would require more (and possibly bigger) developments and associated infrastructure, and would generate an increased number of HGV movements. The higher volumes proposed under Option A would have generally positive impacts on growth with prosperity for all and provision of housing, as they are more likely to provide sufficient minerals for development needed for economic growth and for house-building. A failure to provide sufficient resources could compromise delivery of economic development and push investment out of the county. It could also lead to shortages of building materials, delaying or even preventing necessary development such as housing, business parks and factories. However, as the level in Option C is only a minimum, further extraction could be provided for as and when required, without the need for any formal review, through approving additional appropriate minerals developments.
- 6.6.4 For non-aggregates, the Initial SA Report concluded that 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.
- 6.6.5 The Initial SA Report considered various alternatives to the levels of aggregates proposed in the Second Stage Consultation. The alternatives were:

- **Expressing levels as maxima**  
 Expressing levels as maxima, rather than minima, 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 CO<sub>2</sub> 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.
- **Including a target for recycled/secondary aggregates**  
 Whilst the level of such aggregates was 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.
- **Maintaining a seven year landbank for crushed rock**  
 The Hereford and 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 6. 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.

### Third Stage Consultation

- 6.6.6 As a result of the SA and consultation responses, the Third Stage Consultation now considers sand and gravel requirements separately to crushed rock. The proposed option (A) of the Second Stage Consultation has been taken forward. This received mixed consultation responses, but was the most likely option to avoid under-provision. The new policy, MLP8, only refers to the landbank provision in terms of years, rather than tonnages. This allows the supply/requirement balance to reflect changes in the annual Local Aggregates Assessment. Updated data suggests that 16.254-16.304 million tonnes of sand and gravel should be provided to reach and maintain a 7 year landbank to 2035 and beyond. Because of the low starting level, the policy requires the landbank to be increased in the period 2016-2025, and subsequently maintained at the 7 year level as a minimum.
- 6.6.7 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 aggregate supply at a local level"*. But 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. This is considered to be a positive change, as the MLP now recognises the important role these materials can play in reducing the need for primary extraction.
- 6.6.8 Policy MLP9 seeks to enable the increase or maintenance of the landbank of crushed rock, and the maintenance or enhancement of productive capacity. Unlike sand and gravel, no mention is made in the policy of the minimum landbank that is sought. This reflects the reality that there are no current permitted reserves within Worcestershire.

- 6.6.9 The other policies on non-sand and gravel minerals supply follow a similar pattern to that of crushed rock, and 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.
- 6.6.10 Policy MLPI4 on energy minerals adopts a far more restrictive stance for coal extraction than is the case for other minerals, but this merely reflects national policy<sup>29</sup>. Similarly, the policy makes provision for onshore oil and gas development where likely resources may exist, although evidence suggests it is considered that no such areas are likely to come forward during the plan period.
- 6.6.11 Alternative approaches considered in developing the Third Stage Consultation:

- **Seeking to reach a 10 year landbank of crushed rock as soon as possible**  
This alternative would better accord with national policy<sup>30</sup>, which states that "*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*". 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.

## 6.7 Evolution of the 'Development management' policies and reasonable alternatives

### First Stage Consultation

- 6.7.1 The First Stage Consultation MLP did not propose any development management 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.

### Second Stage Consultation

- 6.7.2 The Second Stage Consultation MLP, as a result of consultation feedback and the consideration of a significant amount of additional policy and guidance, included more detail on the likely topics for criteria-based policies. These topics were related to each of the draft objectives as follows:
- Objective 2) Ensure the long term sustainability of supply of minerals resources.

<sup>29</sup> Department for Communities and Local Government (2012), National Planning Policy Framework, paragraph 149.

<sup>30</sup> Department for Communities and Local Government (2012), National Planning Policy Framework, paragraph 145.

- Safeguarding resources of local and national importance
- Maximising use of recycled aggregates
- Objective 3) Protect and enhance Worcestershire's key economic sectors.
  - Manufacturing
  - Cyber security and defence
  - Horticulture and food production
  - Environmental technology
  - Tourism
- Objective 4) Ensure mineral operations are resilient to and mitigate the impacts of climate change.
  - Sustainable transport
  - Energy and water efficiency of working and processing
  - Minimisation of other emissions from mineral production
  - Maximising use of recycled materials and minimisation of waste
  - Design of development
  - Flood risk
  - Subsidence and land stability
- Objective 5) Utilise mineral restoration to enhance climate change resilience of the county.
  - Habitat quality and fragmentation
  - Flood alleviation
  - Soil resources
- Objective 6) Protect and enhance the natural and historic environment.
  - Water quality and quantity
  - Geodiversity
  - Biodiversity
  - Landscape character
  - International, national and local heritage assets
  - Archaeological features
  - Green Belt
- 7) Protect and enhance health and amenity.
  - Air quality
  - Dust
  - Noise
  - Vibration and seismic instability
  - Visual intrusion
  - Light pollution
  - Safety
  - Public rights of way
  - Access and informal recreation
- 8) Involve all those affected as openly and effectively as possible.
  - Pre-application discussion with communities and other stakeholders
  - Links to statement of community involvement
  - Community liaison groups

- 6.7.3 The Initial SA Report was unable to appraise the likely sustainability impacts of this approach in detail, as there was insufficient information on the policies. Rather, the SA 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.
- 6.7.4 The SA noted that visual intrusion should recognise impacts 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 SA 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 SA 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 SA 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.
- 6.7.5 The SA did not consider any reasonable alternatives to the policy issues, as they were too broad at that stage to allow for a meaningful appraisal.

### **Third Stage Consultation**

- 6.7.6 The Third Stage Consultation has developed the issues set out in the Second Stage Consultation into firm proposed policies. These have been informed by consultation responses and the Initial SA Report. Eleven policies are now proposed:

- Policy MLP 15: Sustainable Design Principles
- Policy MLP 16: Health and Quality of Life
- Policy MLP 17: Access and Recreation
- Policy MLP 18: Biodiversity
- Policy MLP 19: Landscape
- Policy MLP 20: Agriculture and Soils
- Policy MLP 21: Geodiversity
- Policy MLP 22: Water Environment
- Policy MLP 23: Historic Environment
- Policy MLP 24: Transport To and From Site
- Policy MLP 25: Transport Within Mineral Sites
- Policy MLP 26: Sustainable Development Delivery

All but one of these policies can be traced back to the issues set out in the second Stage Consultation; Policy MLP26 is a new addition, and 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 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"*.

- 6.7.7 The policies 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.
- 6.7.8 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.
- 6.7.9 The Initial SA Report felt there was value in recognising green belt as an issue to be developed into policy, but this has not been carried forward into the Third Stage Consultation. It could be argued that there is no need for a specific Green Belt policy (or to include Green Belt within an existing policy), because Green Belt policy is set at the national level and sufficient information is provided in the National Planning Policy Framework and Planning Practice Guidance. There is some merit in this argument (although it would be inconsistent with the approach taken to planning obligations, whereby a local policy is included when national policy could be said to be sufficient). Including a policy, would, however, 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.
- 6.7.10 The value of the planning obligations policy has been questioned in this SA Report. Although it does provide useful information on the potential requirements for planning obligations arising from minerals development, not having a planning obligations policy is considered unlikely to have significant negative sustainability effects.
- 6.7.11 This SA Environmental Report's consideration of alternative is also relevant to the Development Management policies in the Third Stage Consultation. The following reasonable alternative has been identified:
- **Use a 'buffer' or threshold approach to protect sensitive receptors**  
Buffers or thresholds could be based on various measurable parameters covering, for example, distance, sound, light, air 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. The main issues associated with this approach are set out in the appraisal matrix for the alternative titled "A larger number of smaller corridors" in Appendix 2(b).



## 6.8 Evolution of the 'Safeguarding minerals and supporting infrastructure' policies and reasonable alternatives

### First Stage Consultation

- 6.8.1 The First Stage Consultation MLP 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.

### Second Stage Consultation

- 6.8.2 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 at that stage, it did set out how the issues would be approached in the next stage(s) of the MLP would that. It established that the intended policy framework would:

- Identify mineral resources of local and national importance and use these to define Mineral Safeguarding Areas;
- 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.

- 6.8.3 The Second Stage Consultation set out the proposed approach for each mineral type as follows:

- Building stone  
Base MSAs on quarries in the English Heritage [now Historic England] *Strategic Stone Study*.
- Clay  
Base MSAs on all Mercia Mudstone in the county.
- 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, as Worcestershire's silica sand resources fall within sand and gravel resources that are already MSAs.
- Coal  
Base MSAs on the Coal Authority's safeguarding areas
- Oil and Shale Gas  
Do not have MASs, as these resources were not thought to be found in the county.
- Aggregates

Three alternative approaches were put forward, with no one preferred option (see below).

6.8.4 The Second Stage Consultation also recognised alternative approaches to identifying Mineral Safeguarding Areas (MSAs). The alternatives considered were:

- **Do not to identify any clay resources for safeguarding**  
Mercia Mudstone covers a large area of the county, and there was insufficient evidence to identify which sub-groups of Mercia Mudstone were more important than others. The MLP was faced with the choice of either including all of the known resource, or none. The favoured alternative was therefore to identify the entire resource as an MSA, which could be unnecessarily restrictive, but there was no reasonable alternative.
- **Identify all aggregate resources shown on BGS mapping as MSAs**  
As aggregates are found in large areas of the county, this alternative "could be onerous on developers, but would remove the risk of assumptions about the viability of resources, which may change in the future. This approach would safeguard all known resources, rather than specifically focusing on those which are nationally or locally important".
- **Identify all aggregate resources above 10ha and 200m wide as MSAs**  
This approach would identify resource areas of "significance", thereby focussing on resources of national and local importance by screening out smaller areas. This method would not incorporate any assessment of the likely importance of resources. 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 additional burdens on developers"*.
- **Identify 'key' or 'significant' resources as MSAs**  
This approach *"would result in more focused safeguarding areas and is unlikely to include areas that are not of national and local importance"*. This alternative would have the lowest burden on developers, but is limited by the method used in analysing the mineral resources, including only having limited data for some areas. This risked some areas of resource falling outside the MSAs, potentially compromising long-term supply.

6.8.5 In addition to the mineral resources themselves, the Second Stage Consultation 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 – and that would be developed into a policy in the next MLP – were set out in the Second Stage Consultation as follows:

- **Existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine dredged materials.**

Worcestershire is not a coastal county and there are currently no rail links to quarries in Worcestershire. We therefore do not propose to identify any rail or sea links to safeguard. Wharfages exist at two mineral sites in the county. We propose to identify such facilities as assets which should be safeguarded. In general

we propose to safeguard wharfbages at hub/processing sites but not to safeguard wharfbages at “satellite sites” which have been fully worked.

- **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.**

Batching plants are not “County Matters”, they are permitted and regulated by the District Councils (and the Environment Agency). We therefore do not current hold a database of concrete batching facilities. Further investigation is needed into the location of these assets.

Once this information has been collated we propose to identify such facilities as assets which should be safeguarded.

We are not aware of any facilities in the county for the manufacturing of coated materials, or other concrete products. We therefore do not propose to identify any such facilities to safeguard. However, policies could safeguard any such developments permitted during the life of the plan.

Facilities for the handling, processing and distribution of recycled aggregate materials are safeguarded by policy WCS 16 in the Waste Core Strategy. We are not aware of any facilities for substitute or secondary aggregate materials. However, policies could safeguard any such developments permitted during the life of the plan.

- 6.8.6 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 MPA resources. The SA said that, given the stated landbank of clay already available, safeguarding the entire resource – including that beneath the urban areas and known areas for development – 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.
- 6.8.7 The SA noted that the resource areas considered unviable at the time of preparing the Second consultation Stage MLP, and therefore discounted from inclusion, may not necessarily be unviable in future. The SA 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. The SA 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 SA found that the social impacts could vary; important development, including housing or health facilities, 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.

- 6.8.8 The SA 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.
- 6.8.9 The Second Stage Consultation MLP included conflicting proposals on the approach to silica sand. Whilst stating 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 SA recommended that the MLP should clarify whether the silica sand within solid sand deposits can be identified as a separate resource.
- 6.8.10 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. The SA suggested that not safeguarding silica sand could see it being used for conventional aggregate purposes, rather than for its specialised use.
- 6.8.11 The SA 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.
- 6.8.12 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.

### **Third Stage Consultation**

- 6.8.13 The Third Consultation Stage MLP addresses the points raised in the SA, as well as others made during the consultation.
- 6.8.14 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 now uses quarries identified in the Herefordshire and Worcestershire Earth Heritage Trust's project *A Thousand Years of Building with Stone*.

- 6.8.15 The approach to clay also accords with the Initial SA's findings; the Third Stage Consultation has 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 perform poorly in sustainability terms – particularly against economic objectives.
- 6.8.16 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) has been maintained. In the light of this evidence, there is no reasonable alternative to this approach.
- 6.8.17 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.
- 6.8.18 Coal was previously proposed as an MSA, but this has not been continued in the Third Stage Consultation. This is because more up-to-date data from the Coal Authority shows there is no viable resource in the county. There is therefore no reasonable alternative to not having a coal MSA.
- 6.8.19 The approach of the Second Stage Consultation's option (c) for aggregates safeguarding has been taken forward into the current plan, as there has been no evidence to support any alternative.
- 6.8.20 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*".

## **6.9 Evolution of the 'Implementation and monitoring' chapter and reasonable alternatives**

- 6.9.1 No significant sustainability issues were raised in relation to implementation and monitoring in the Initial SA report. The monitoring approach in the Third Stage Consultation MLP is considered in section 5.10 of this report.

**APPENDIX I: SEA DIRECTIVE REQUIREMENTS AND WHERE THEY  
HAVE BEEN MET**

| <b>SEA Directive Requirements</b>  | <b>Location in this SA Report (or Scoping Report, where relevant)</b> |
|--|---|
| a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes.  | Sections 2.1, 3.1, and 3.2  |
| b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.  | Sections 1.4 and 4.1 of SA Scoping Report                             |
| c) The environmental characteristics of areas likely to be significantly affected.   | Sections 1.4 and 4.1 of SA Scoping Report                             |
| d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.   | Sections 1.4 and 4.1 of SA Scoping Report                             |
| e) The environmental protection objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation.  | Section 1.45 and SA Scoping Report                                    |
| f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. | Section 5<br>Appendix 2   |
| g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme.   | Sections 4.3 and 5<br>Appendix 2                                      |
| h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information.  | Sections 6.5-6.9 and 1.7  |
| i) a description of measures envisaged concerning monitoring in accordance with Art. 10.   | Section 4.10  |
| j) a non-technical summary of the information provided under the above headings.   | Section 1   |

## **APPENDIX 2: APPRAISAL MATRICES**



(a) Appraisal of Vision and Objectives

Appraisal of vision

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>   | <p>++</p>                    | <p>References to <i>"the diverse character of the county and surrounding area"</i> and to <i>"the need to achieve final landforms and restoration that delivers multifunctional benefits and is appropriate in the landscape"</i> should help to deliver the safeguarding element of this SA objective. The <i>"holistic approach to ... enhancing the natural ... environment"</i> also supports the strengthening of the landscape.</p>   | <p>No mitigation has been identified.</p>   |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>  | <p>++</p>                    | <p>Biodiversity and geodiversity are supported by the vision, with its <i>"holistic approach to ... enhancing the natural ... environment"</i>. Whilst the vision does not include the words 'biodiversity' or 'geodiversity', both are components of green infrastructure, and the vision states that <i>"Mineral sites will form an integrated part of Worcestershire's multifunctional green infrastructure network"</i>.</p>  | <p>No mitigation has been identified.</p>   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local</p> | <p>++</p>                    | <p>The vision supports local character and distinctiveness, stating that <i>"The design, working and restoration of mineral sites will reflect the locally distinctive character of the strategic corridors, [and] the site specific context"</i>. Alongside the support for green infrastructure mentioned above, the vision also refers to the need for water and energy efficiency and to <i>"enhancing the built and historic environment"</i>. Collectively, these aspects should help to deliver this SA objective.</p> | <p>The previous vision included references to local building stone, which were welcomed. Consideration could be given to re-instating this, which would support the SA objective.</p> |

Appraisal of Vision

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| character and distinctiveness.  |    |  |   |
| <b>4: Material assets</b><br>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. | ++ | The reference to " <i>making best use of substitute, secondary and recycled minerals and mineral wastes</i> " is welcomed, and accords with the previous SA's recommendations that such material be " <i>maximised</i> " rather than simply " <i>encouraged</i> ". The final part of the vision explicitly supports the safeguarding of mineral reserves. Green infrastructure is also explicitly supported. | Consideration could be given to referencing agricultural land and the green belt. |
| <b>5: Natural Resources</b><br>Protect and enhance water and air quality.   | +  | The vision seeks " <i>a holistic approach to ... enhancing the natural ... environment</i> ", but water and air quality are not specifically recognised.   | Consideration could be given to referencing water and air quality.                |
| <b>6: Climate Change and energy</b><br>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 vision specifically includes the need for minerals operations, transport and processing to mitigate and adapt to climate change. It also calls for energy efficiency, but does not specifically support renewable energy.  | No mitigation has been identified.  |

Appraisal of Vision

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| <p><b>7: Flooding</b><br/>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>Apart from the reference to green infrastructure and the need to mitigate and adapt to climate change, the vision does not recognise flooding as an issue. This is not considered to be a significant problem, given that most minerals extraction will be flood-compatible development.</p>   | <p>No mitigation has been identified.</p> |
| <p><b>8: Access to Services</b><br/>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>The vision does support multifunctional green infrastructure, which includes access and recreation, but there are no specific parts of the vision which address access to services.</p>  | <p>No mitigation has been identified.</p> |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0 | <p>The vision refers to the role of minerals development in supporting quality of life, but does not specifically refer to health and amenity (although these are related to green infrastructure, which the vision does support). Overall, the references are considered to be too minor to warrant a positive rating against this SA objective.</p> | <p>No mitigation has been identified.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1)</p>   | + | <p>The vision's reference to "<i>making the best use of substitute, secondary and recycled minerals and mineral wastes to minimise the need for primary materials</i>" fully accords with the waste hierarchy. It does not, however, seek to reduce waste arising from minerals sites.</p>  | <p>No mitigation has been identified.</p> |

Appraisal of Vision

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| reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   |   |   |                                    |
| <b>I1: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | - | Whilst the vision seeks to ensure the efficiency of transport, it does not seek to reduce the need to travel.   | No mitigation has been identified. |
| <b>I2: Growth with prosperity for all</b><br>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.       | + | The vision seeks to deliver sustainable economic growth, which should support this SA objective. There is nothing about developing the skills base, but this is not considered to be necessary in the vision.   | No mitigation has been identified. |
| <b>I3: Provision of housing</b><br>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments. | + | Although it does not identify housing specifically, the vision seeks to ensure that minerals development supports quality of life. Provision of housing will require sufficient minerals, and the vision seeking a " <i>steady, adequate and sustainable supply</i> " should help to ensure that construction can take place where and when needed in Worcestershire. | No mitigation has been identified. |
| <b>I4: Participation by all</b><br>Provide opportunities for   | + | The vision states that the " <i>design, working and restoration of mineral sites will reflect ... effective community engagement</i> ". This should help to ensure that communities are given opportunities to share their views on   | No mitigation has been identified. |

Appraisal of Vision

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| <p>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>  |   | <p>minerals development.</p>  |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>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>Although the vision does not directly refer to technology, in seeking minerals development that is water and energy efficient, the vision could indirectly support this SA objective through encouraging technological solutions to ensure environmental protection and enhancement. Overall, however, the linkages are considered insufficient to enable a positive rating against this SA objective.</p> | <p>No mitigation has been identified.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | 0 | <p>The vision does not include anything on skills and education. There could be some indirect benefits on this SA objective as a result of the need for adequately skilled and educated personnel to help deliver the vision, but these linkages are too tangential to lead to a positive rating.</p>   | <p>No mitigation has been identified.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear</p>  | 0 | <p>The vision does not support this SA objective, but this is not considered to be an omission that requires rectifying.</p>  | <p>No mitigation has been identified.</p> |

Appraisal of Vision

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| of crime and antisocial behaviour. |  |  |  |
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**Appraisal of objectives**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation                      |
|--|------------------------------|--|---|
| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | <p>++</p>                    | <p>Objective 1, in supporting the spatial strategy, will help to deliver this SA objective. The spatial strategy is driven by landscape character and the opportunities presented by minerals development within coherent landscape-scale networks. Objective 2, in maximising non-primary resources, will help to ensure that landscape impact is no greater than is necessary. Objective 10, in protecting and enhancing (inter alia) people's amenity, should help to minimise negative visual impact. Objective 11, in protecting and enhancing the natural and historic environment and local character, will strongly support this SA objective. Objective 13, in optimising opportunities for multifunctional green infrastructure – which includes landscape – will also make a valuable contribution to this SA objective.</p>  | <p>No mitigation has been identified.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | <p>++</p>                    | <p>Objective 1, which supports the spatial strategy, will help to deliver this SA objective. The spatial strategy is driven by landscape-scale opportunities which include biodiversity and geodiversity. Objective 2, in reducing the need for primary resources, will help to protect undiscovered geodiversity assets in-situ. This could be both a positive (in that the resource will not be threatened by damage or degradation), and also a negative (as the educational opportunities to learn from the resource will not arise). Objective 11 strongly supports this SA objective, through protecting and enhancing the natural and historic environment and distinctive local character. This encompasses both biodiversity and geodiversity, and covers both conservation (protection) and enhancement. Objective 13, in calling for high-quality multifunctional green infrastructure (which includes biodiversity and geodiversity) will also support his SA objective.</p> | <p>No mitigation has been identified.</p> |
| <p><b>3: Cultural heritage, architecture and archaeology</b></p>   | <p>++</p>                    | <p>Objective 1, which supports the spatial strategy, will help to deliver this SA objective. The spatial strategy is driven by landscape-scale opportunities which include the historic environment. Objective 2, in minimising the need of primary minerals, should help to reduce the risk</p>   | <p>No mitigation has been identified.</p> |

Appraisal of Objectives

|   |           |   |   |
|---|-----------|---|---|
| <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>   |           | <p>to the historic environment by lessening the requirement for extraction that could compromise historic assets or their settings. Objectives 3, 4, 5, 6 and 7 could all help to ensure that the historic environment is preserved and enhanced, as some or all of the minerals they make provision for will be essential to repair historic buildings and to ensure new development reflects historic character. Objective 5, in particular, has a valuable role to play here. The resource efficiency aspects of this SA objective will be furthered by objective 9, which requires the prudent use of natural resources. Objective 10, in requiring the protection and enhancement of amenity, could also benefit the historic environment. Objective 11 is most directly relevant, and strongly accords with this SA objective. Objective 13, which requires high-quality multifunctional green infrastructure (of which the historic environment forms part) will also make a positive contribution to this SA objective.</p> |   |
| <p><b>4: Material assets</b><br/>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>Objectives 2 and 7 combine to reduce the need for minerals, and to safeguard minerals, which together should ensure the efficient use of land. Objective 12 seeks to protect and enhance the vitality of the local economy. As agriculture is a part of Worcestershire's economy, this should help to accord with the SA objective's safeguarding of agricultural land. Objectives 12 and, especially, 13, will help to safeguard open space/green infrastructure.</p>   | <p>No mitigation has been identified.</p> |



Appraisal of Objectives

|  |    |  |   |
|--|----|--|---|
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | +  | <p>Objective 2, in minimising the need for primary resources, should help to reduce the potential for any negative air or water quality impacts arising from minerals development. Objective 9 could indirectly support the protection of air quality, as the mitigation of and adaptation to climate change often includes the reduction in fossil-fuelled plant and transport, with its inherent emissions risks to air quality, and the use of planting, which can help to filter atmospheric particulates and therefore contribute to air quality enhancements. Similarly, objective 10, in calling for the protection and enhancement of health, well-being, safety and amenity, is likely to encourage a reduction in emissions, especially from transport, which can also help to benefit air quality. Objective 11, in protecting and enhancing the natural environment, could also play a role in protecting and enhancing air and water quality. Overall, the linkages between the MLP objectives and this SA objective, whilst generally positive, tend to be indirect.</p> | <p>No mitigation has been identified.</p> |
| <p><b>6: Climate Change and energy</b><br/>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>Objective 2, in reducing the need for primary minerals, will indirectly support this SA objective by reducing the need for energy and the resultant climate change impacts from minerals extraction and processing. Objectives 3, 4, 5, and 6, in seeking to provide sufficient minerals within Worcestershire, should minimise the need to import materials from elsewhere, with attendant climate change and energy implications. Objective 9 directly supports this SA objective. Indirect benefits could also arise as a result of objectives 10, 11, 12, and 13. The effect of objective 1 on this SA objective could vary according to the location and nature of development within the corridors.</p>   | <p>No mitigation has been identified.</p> |

Appraisal of Objectives

|   |           |   |   |
|---|-----------|---|---|
| <p><b>7: Flooding</b><br/>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>0</p>  | <p>There are no strong linkages between the MLP objectives and this SA objective. There is potentially an indirect benefit from objectives 9, 10, 11, and 12, all of which could have a flooding dimension.</p>   | <p>No mitigation has been identified.</p> |
| <p><b>8: Access to Services</b><br/>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>Objectives 10 and 13 strongly support this SA objective. Other less significant support may come from objectives 8, 11, and 12.</p>  | <p>No mitigation has been identified.</p> |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | <p>++</p> | <p>Objective 10 will make a significant contribution to this SA objective. Objective 13 could also offer a strong degree of support. Objective 9 could have a minor indirect benefit, as the mitigation of and adaptation to climate change could improve people's health and reduce the inequalities between those whose health could suffer at least partially from impacts of climate change (flooding, overheating, etc.)</p> | <p>No mitigation has been identified.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1)</p>   | <p>+</p>  | <p>There is no specific objective which seeks to explicitly reduce waste, although strong linkages can be made with Objective 2, which will support this SA objective. Objective 9, in seeking the "prudent use of natural resources" can also help to support this SA objective by reducing</p>  | <p>No mitigation has been identified.</p> |

Appraisal of Objectives

|  |           |   |  |
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| <p>reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>  |           | <p>unnecessary resource use and consequently reducing waste.</p>  |  |
| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | <p>?</p>  | <p>There is no specific mention of transport in any of the objectives, but Objectives 2, 3, 4, 5, 6, and 7 could all indirectly support this objective by reducing the need to transport minerals from outside the county. The effects of Objective 1 on this SA objective will depend on the specific location of operations, as some areas within the corridors will help to reduce transport, whereas others may not be as accessible. Objective 9 will indirectly support this SA objective, as the mitigation of climate change includes a reduction in emissions, including those from transport.</p> | <p>Consideration could be given to specifically mentioning the need to reduce transport movements.</p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>++</p> | <p>Objective 12 strongly supports this SA objective. Objectives 7, 10, and 13 could also make a less substantial contribution.</p>  | <p>No mitigation has been identified.</p>  |
| <p><b>I3: Provision of housing</b><br/>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>++</p> | <p>The provision of housing is directly linked to the materials needed for construction. As such, objectives 3 and 4 (and, to a lesser extent, 5 and 6), will support this SA objective. Objectives 10, 11, and 13 will all help to ensure clean, safe and pleasant local environments.</p>   | <p>No mitigation has been identified.</p>  |

Appraisal of Objectives

|   |           |  |   |
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| <p><b>14: Participation by all</b><br/>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> | <p>++</p> | <p>Objective 8 strongly supports this SA objective.</p>  | <p>No mitigation has been identified.</p> |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>          | <p>0</p>  | <p>There are no strong linkages to this SA objective. Indirect benefits on this SA objective could potentially be delivered by objectives 9, 12, and 13.</p> | <p>No mitigation has been identified.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>  | <p>0</p>  | <p>No linkages have been identified.</p>   | <p>No mitigation has been identified.</p> |

Appraisal of Objectives

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| <b>17: Population (crime &amp; fear of crime)</b><br>Reduce crime, fear of crime and antisocial behaviour. | 0 | No linkages have been identified. |  |
|--|---|-----------------------------------|--|

## (b) Appraisal of Chapter 5: Spatial Strategy: Location of mineral development

## Policy MLP 1 Strategic Location of Development

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
|--|------------------------------|--|--|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact. | +                            | 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. | The landscape and visual impacts of minerals development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP, including <i>Policy MLP 19 Landscape</i> and <i>Policy MLP 16 Health and Quality of Life</i> . |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.      | +                            | 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.  | The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP, including <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i> .                                  |
| <b>3: Cultural heritage,</b>   | 0                            | There are a range of historic environment assets within the corridors, but equally there are assets outside the corridors, and the policy itself is  | The impacts of mineral development in any given location – inside or outside the   |

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| <p><b>architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>   |            | <p>unlikely to have any significant effects on this SA objective. Although the historic environment forms a part of green infrastructure, it has not been instrumental 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. Nevertheless, on balance, there are no likely significant effects on the historic environment resulting from the corridors approach.</p> | <p>corridors – will be mitigated through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p>   |
| <p><b>4: Material assets</b><br/>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>0</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. The policy itself is considered unlikely to have significant effects on this SA objective.</p>   | <p>The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>. As noted elsewhere in this SA, consideration could be given to including the protection of green belt land within a new or existing policy.</p> |
| <p><b>5: Natural Resources</b><br/>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, 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</p>   | <p>The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP, including <i>Policy MLP 22 Water Environment</i> and <i>Policy MLP 16</i></p>   |

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|  |            | <p>sensitive receptors. Water quality, however, is one of the green infrastructure aspects that could be enhanced through appropriate 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 and whilst these are not being appraised here, <i>Policy MLP 1 Strategic Location of Development</i> does set the overall context to enable these benefits to be identified and delivered.</p> <p>The corridors include or are close to all of the county's Air Quality Management Areas. This policy in itself is considered unlikely to lead to significant effects on the AQMAs, as the corridors are too large to identify specific impacts from sites.</p>  | <p><i>Health and Quality of Life.</i></p>  |
| <p><b>6: Climate Change and energy</b><br/>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. As one of the key roles of green infrastructure is to mitigate and, especially, to adapt to climate change, it follows that these areas can make a greater contribution to this SA objective than areas outside the corridors and, as such, this policy may have minor positive effects on this SA objective, although there is a good deal of uncertainty.</p> <p>The exact climate change impacts of minerals development can only be predicted once the location and detail of workings is known. The corridors are simply too large to enable any meaningful appraisal of specific impacts to be made.</p> <p>The climate change effects will depend upon working practices and transport modes.</p> <p>The corridors are, in very broad terms, close to major rivers, which could provide opportunities for sustainable transport movements, although evidence suggests that a significant shift to water-borne transport is unlikely within the plan period. Equally, the corridors include areas that are less accessible to the strategic transport network than some areas outside the corridors, which could see transport emissions</p> | <p>The potential climate change impacts and benefits of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i>.</p> |



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|   |   | increase, thereby exacerbating climate change.  |  |
| <p><b>7: Flooding</b><br/>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>The corridors include significant areas of floodzones 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 and it is unrealistic to seek to exclude them. This policy sets a context for identifying and delivering specific actions to secure flood betterment, according to the specific opportunities within each landscape type.</p> | <p>The impacts of flooding on mineral development – and of minerals development on flooding – will be considered at a site-specific scale and will be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i>.</p> |
| <p><b>8: Access to Services</b><br/>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>Public rights of way extend across the county in all areas, inside and outside the corridors. 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. The policy itself is unlikely to have a significant effect on this SA objective, although it does set a context for the more specific corridor policies to identify particular opportunities to improve rights of way.</p>                                       | <p>The impacts of mineral development within the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 17 Access and Recreation</i><b>Error! Reference source not found..</b></p>   |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in</p>  | 0 | <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 correspondingly positive effects on health, which can be closely linked to GI (for example through the improved</p>   | <p>The impacts on health as a result of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i>.</p>   |

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| <p>health.</p>   |          | <p>quantity of and/or accessibility to green space).<br/>Comparing the corridors against a map of high-level health indicators<sup>31</sup> demonstrates no particular linkages, further reinforcing the lack of any clear effect on this SA objective.</p>   |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>The corridors themselves are not considered likely to significantly impact this SA objective.</p>  | <p>The waste impacts of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>.</p>  |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | <p>?</p> | <p>The corridors are, in very broad terms, close to major rivers, which could provide opportunities for sustainable transport movements. However, there are limited opportunities for accessing river transport, and increased use of river transport in the future cannot be guaranteed, and is considered unlikely.<br/>The corridors are reasonably accessible to the county's motorways, which are likely conduits for minerals once extracted/processed. Overall, the corridors are closer to the motorway network than those areas outside the corridors, although the relationship is not a strong one, and proximity is not the same as accessibility; both factors vary considerably across the corridors. The Lower Severn strategic corridor is particularly well-sited for access to the M5 and/or M50, given how closely it follows the course of the river). Overall, this policy is considered unlikely in itself lead to significant effects under this SA objective.<br/>Most of the corridors accord reasonably well with those areas of the county where significant housing and employment growth is expected (generally around the city and towns), although the corridors exclude some areas of resource that are very close to areas expecting significant development, which could lead to unnecessary transport movements.</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP including <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i>.</p> |

<sup>31</sup> 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

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| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p style="text-align: center;">-/+</p> | <p>The corridors provide a logical means for guiding extraction, but they do introduce a policy restriction on minerals development outside the corridors that has the potential to frustrate delivery and thereby compromise the delivery of infrastructure. This risk is offset by the fact that significant quantities of viable resources are included. The corridors encompass 70% of key and significant sand and gravel resources, and 72% of the Wildmoor Foundation silica sand – meaning the majority of these resources will not be restricted. The proportions are, however, lower for other minerals; only 20% of Mercia Mudstone brick clay and 9% of former building stone quarries fall within the corridors. No crushed rock is within the corridors at all. Although Worcestershire has significant permitted reserves of clay, these fall under the control of a very limited number of operators/sites, and it would increase the county's resilience if a larger proportion of clay were to be found within the corridors. This is especially important given proposed levels of development not just in Worcestershire, but also in the neighbouring West Midlands conurbation to the north. Countering these restrictive aspects is the ability of the spatial strategy to provide certainty to developers, therefore helping to ensure that sufficient provision comes forward without delay.</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP.</p> |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">-/+</p> | <p>The corridors provide a logical means for guiding extraction, but they do introduce a policy restriction on minerals development outside the corridors that has the potential to frustrate delivery and thereby compromise the supply of housing and the 'clean, safe and pleasant local environments' in which it will sit. This risk is offset by the fact that significant quantities of viable resources are included. The corridors encompass 70% of key and significant sand and gravel resources, and 72% of the Wildmoor Foundation silica sand – meaning the majority of these resources will not be restricted. The proportions are, however, lower for other minerals; only 20% of Mercia Mudstone brick clay and 9% of former building stone quarries fall within the corridors. No crushed rock is within the corridors at all. Although Worcestershire has significant permitted reserves of clay, these fall under the control of a very limited number of operators/sites, and it would increase the county's resilience if a larger proportion of clay were to be found within the corridors. This is especially important given proposed levels of development not just in</p>   | <p>The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP.</p> |

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|   |   | Worcestershire, but also in the neighbouring West Midlands conurbation to the north. Countering these restrictive aspects is the ability of the spatial strategy to provide certainty to developers, therefore helping to ensure that sufficient provision comes forward without delay. |   |
| <p><b>I4: Participation by all</b><br/>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.   | The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP. |
| <p><b>I5: Technology, innovation and inward investment</b><br/>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 impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP. |

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| <p><b>I6: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p> | 0 | <p>No impacts on this SA objective have been identified.</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP.</p> |
| <p><b>I7: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p>   | 0 | <p>No impacts on this SA objective have been identified.</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – will be mitigated through other policies in the MLP.</p> |

**Reasonable alternative to MLP1: a larger number of smaller corridors**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | +/-                          | <p>A larger number of smaller corridors could allow for a more tailored approach to the landscape, and could take into account designations such as parks and garden of national and local importance. By avoiding these areas entirely, and including buffers around designations, including AONBs, the potential for negative effects could be reduced compared to the MLPs proposed approach. There is clear potential for minerals development to have local and wider negative visual impacts. Adopting a buffer approach around housing and other sensitive receptors could help to minimise this risk. The positive effects on landscape coherence likely under the proposed MLP approach could be maintained by keeping the corridors within the same landscape type, but the scale of any potential improvements would necessarily be limited if there were large intervening areas where development could not take place, therefore preventing the same degree of joined-up benefits. Smaller corridors could allow other resource areas, such as those south and east of Tenbury Wells, to be captured. This could help to spread the benefits of GI restoration to other areas of the county.</p> | <p>The landscape and visual impacts of minerals development in any given location – inside or outside the corridors – would still require mitigation through other policies in the MLP, including <i>Policy MLP 19 Landscape</i> and <i>Policy MLP 16 Health and Quality of Life</i>.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | +/-                          | <p>Smaller corridors could allow for a more nuanced approach to designated assets by specifically excluding them, either with or without an additional buffer zone. This approach would ensure that risks of harm from development are reduced. It would also, however, fundamentally compromise the restoration-led strategy integral to the MLP and which has already been recommended through the various stages of the MLP development and its accompanying SA. Minerals development and restoration can offer the opportunity to work with the natural environment to help improve connectivity and enhance condition of individual assets and entire networks. Removing biodiversity and geodiversity sites would prevent these opportunities from arising to the</p>  | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP, including <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i>.</p>  |

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|  |   | same extent.   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>   | + | <p>The historic environment could play more of a role in determining the corridors, by avoiding designated assets. This would be a major change to the general approach of the MLP, as the historic environment has not generally been one of the key green infrastructure components that has informed the corridors approach; the linkages and benefits have been of a secondary, 'spin-off' nature. Avoiding historic environment assets would reduce the risk of harm occurring as a result of development and - given that none of the MLP's corridor priorities are considered likely to make a strong positive contribution to the historic environment – the benefits of the GI restoration approach would not be felt whether this approach or that proposed in the MLP was adopted. The 'enhancement' part of this objective would therefore not be delivered under this or the existing policy, but the 'preservation' part could see beneficial effects.</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p>  |
| <p><b>4: Material assets</b><br/>                 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 | <p>Agricultural land quality varies across the county, and it would be impractical to seek to avoid 'best and most versatile' agricultural land, not least because many areas are classed as Grade 3, and would require further assessment to determine whether they are Grade 3a or Grade 3b. The Green Belt covers around 24% of Worcestershire's land area, and there is significant overlap between the Green Belt and mineral resources (especially solid sand). This means that it would be impractical to avoid green belt land.</p>  | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>. As noted elsewhere in this SA, consideration could be given to including the protection of green belt land within a new or existing policy.</p> |

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| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | <p>+/?</p> | <p>Smaller corridors could be drawn to avoid the county's source protection zones, and thereby decrease the risk of negative effects on water quality as a result of minerals activity. The potential scale of joined-up benefits under the proposed MLP approach would potentially be lost with smaller corridors, including the various restoration gains resulting from the corridor priorities.</p> <p>Smaller corridors could also avoid and buffer Air Quality Management Areas. How practical this would be is open to question, as the AQMAs are generally associated with transport corridors and, even if minerals sites themselves avoided AQMAs, the transport of minerals using HGVs could still potentially compromise air quality.</p>  | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP, including <i>Policy MLP 22 Water Environment</i> and <i>Policy MLP 16 Health and Quality of Life</i>.</p>          |
| <p><b>6: Climate Change and energy</b><br/>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 climate change benefits likely to arise as a result of the corridor priorities may not be realised with smaller corridors. With smaller corridors, the exact impact on climate change as a result of development remains difficult to identify, and can only be predicted once the location and detail of workings is known. Climate change effects will depend upon working practices and transport modes. Smaller corridors could seek to target more sustainable transport options (by locating close to navigable waterways, for example), but these have been recorded in the MLP as being unlikely to provide a significant modal shift. Locating closer to major road junctions may prevent the need for excessive movements across county to access the strategic road network, and thereby reduce carbon and other emissions from transport.</p> | <p>The potential climate change impacts and benefits of mineral development in the corridors would require mitigation through other policies in the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i>.</p>          |
| <p><b>7: Flooding</b><br/>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>0/-</p> | <p>Given the natural relationship between floodzones and, in particular, river terrace sand and gravel resources, it would be impractical to seek to avoid floodzones in determining a larger number of smaller corridors. As such, no changes in likely effects compared to those under the MLP proposals are envisaged, apart from the potential loss of benefits to flood betterment that are predicted to occur under the MLP's priorities for each corridor, which may be lost under a less cohesive approach. Many aspects of minerals development will not be "inappropriate" in these zones.</p>   | <p>The impacts of flooding on mineral development – and of minerals development on flooding – will be considered at a site-specific scale and will be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i>.</p> |



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| flooding in all other areas.   |     |   |   |
| <b>8: Access to Services</b><br>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/- | Public rights of way extend across the county in all areas, inside and outside the corridors. It would be technically possible, but probably impractical, to avoid all rights of way when allocating corridors, as these considerations are better addressed at the site-specific level. There would therefore be no benefit from risk avoidance, but quite possibly a loss of the positive contribution to be made to access and recreation as a result of the MLP's proposed corridor priorities.   | The impacts of mineral development within the corridors would require mitigation through other policies in the MLP, including <i>Policy MLP 17 Access and Recreation</i> <b>Error! Reference source not found..</b> |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the population and reduce inequalities in health.   | 0   | Smaller corridors could seek to avoid sensitive receptors such as housing development. This would help to reduce the risk of negative impacts from minerals development, such as noise, dust, etc. from negatively affecting people's health and/or quality of life. Avoiding every dwelling would be unlikely to be practicable, and an approach similar to the adopted Hereford and Worcester Minerals Local Plan (whereby clusters of 6 or more houses were buffered from development) has been discredited in the consideration of whether to apply a sieve test in the new MLP <sup>32</sup> . | The impacts on health as a result of mineral development in the corridors would require mitigation through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i> .                   |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   | 0   | A larger number of smaller corridors is considered unlikely to have any significantly impact this SA objective.   | The waste impacts of mineral development in the corridors would require mitigation through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i> .  |

<sup>32</sup> Worcestershire County Council (2016) Minerals Local Plan Third Stage Consultation, Appendix I: 'Constraints considered in the current Minerals Local Plan and our approach now'

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| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | <p>?/+</p> | <p>A larger number of smaller corridors could be targeted more effectively on those areas where there is a strong potential for sustainable transport. Such areas are, however difficult to identify, as there are no suitable railheads in Worcestershire, and the MLP evidence suggests that a meaningful increase in water-borne transport is unlikely within the plan period. Being situated close to the strategic road network could help to ensure that minerals movements are kept to the lowest level necessary. Minerals can, however, only be extracted where they are found; it may be difficult to establish a robust distance from the strategic road network which is considered 'acceptable'. The location of mineral resources in Worcestershire also means that some areas will inevitably be in more remote locations, and this option could potentially prevent the extraction of such resources. As with the MLP's proposed approach, the likely impacts of this alternative remain unclear, but with perhaps a greater opportunity for positive effects if a workable methodology could be established to minimise transport movements.</p>  | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP including <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i>.</p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | <p>+/-</p> | <p>A larger number of smaller corridors could potentially capture more of the minerals resource. There are areas of resources currently outside the strategic corridors that could make a contribution towards Worcestershire's growth and prosperity, both through the minerals operations themselves and through providing the material necessary to meet the county's economic development and infrastructure needs. It could also support that part of the SA objective that calls for the benefits to be felt in both urban and rural areas; there are currently large areas of the county not covered by a corridor but where mineral resources exist, including around Tenbury Wells and the rural east of Worcester. For mercia mudstone, in particular, very large parts of the county have resources that are not within corridors. More corridors could allow more resources to be captured. They could also allow resources to be available closer to the point of use, potentially reducing transport costs, and allow smaller operators to enter the market, subject to other viability issues. There is also the potential for the additional restrictions - discussed above and below in relation to other SA objectives – reducing the available area of resource to a point which is below that of the</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP.</p>   |

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|   |     | currently proposed corridors. This would lead to negative effects on growth with prosperity for all.  |  |
| <p><b>I3: Provision of housing</b><br/>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>  | +/- | A larger number of smaller corridors could potentially capture more of the minerals resource. There are areas of resources currently outside the strategic corridors that could make a contribution towards Worcestershire's housing requirement, as well as providing the material to build clean, safe and pleasant local environments. More corridors could allow more resources to be captured. They could also allow resources to be available closer to the point of use, potentially reducing transport costs, and allow smaller operators to enter the market, subject to other viability issues. There is also the potential for the additional restrictions - discussed above and below in relation to other SA objectives – reducing the available area of resource to a point which is below that of the currently proposed corridors. This would lead to negative effects on provision of housing. | The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP. |
| <p><b>I4: Participation by all</b><br/>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.   | The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP. |
| <p><b>I5: Technology, innovation and inward investment</b><br/>Promote and</p>  | 0   | No impacts on this SA objective have been identified.   | The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation                                    |

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| <p>support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> |          |  | <p>through other policies in the MLP.</p>   |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and antisocial behaviour.</p>   | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>The impacts of mineral development in any given location – inside or outside the corridors – would require mitigation through other policies in the MLP.</p> |

**Reasonable alternative to MLP1: Corridors based on Environmental Character Areas**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
|--|------------------------------|---|--|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | +                            | <p>The ECAs are informed by, among other things, landscape character and condition. Background documents produced as part of MLP development, as well as the evidence base provided by the Worcestershire Green Infrastructure Partnership, show that there are clear guidelines for contributing to the landscape which are specific to each ECA. Minerals developers would be able to draw upon this evidence to help inform their proposals. The ECAs are drawn at a generally smaller scale than the strategic corridors (although the larger strategic corridors do differentiate between landscape types, and include specific priorities tailored to each). This means that a finer grain of detail is available. Relying on ECAs to guide the approach to landscape may risk failing to achieve a similar degree of joined-up enhancement that is supported by the strategic corridors. This is because each ECA has its own discreet set of principles. The boundaries between LCA are deliberately vague, which may require a greater degree of liaison between developers and green infrastructure experts where proposals come forward between two or more ECAs. The ECAs deliberately avoid the consideration of designated assets, so in this respect this alternative would be similar to the proposed strategic corridors: the effects on AONBs and parks and garden of national and local importance would remain unknown until site-specific proposals came forward.</p> <p>Arguably, losing the targeted approach of the corridors and relying instead on ECA guidance would mean the risk of landscape harm from development would be more widespread, which the opportunities for landscape gain would be the same, if not slightly curtailed by the smaller scale of the ECAs. Overall, however there is insufficient evidence to justify a significant departure from the appraisal of landscape effects given to the strategic corridors.</p> | <p>The landscape and visual impacts of minerals development in any ECA would be mitigated through other policies in the MLP, including <i>Policy MLP 19 Landscape</i> and <i>Policy MLP 16 Health and Quality of Life</i>.</p> |

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| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>   | <p>+ / ++</p> | <p>The ECAs are informed by, among other things, the biodiversity basemaps produced by the Worcestershire Green Infrastructure partnership. The ECAs give "greater importance to biodiversity as the key component of Green Infrastructure"<sup>33</sup>. Whilst this could be seen to support an appraisal outcome of significant positive effects, the geodiversity element of this SA objective has not played such a key role, and the determination of the ECAs does not, in itself, improve the likelihood of biodiversity enhancement compared to the strategic corridors. Whilst the ECAs, like the strategic corridors, set a framework for how development should seek to respond to biodiversity and geodiversity, the ECAs cover all non-urban areas of the county, and so would not guide development towards (or away from) certain areas. This means that, whilst all areas of the county could potentially benefit from GI restoration, no parts of the county would be excluded from the inherent risk to biodiversity and geodiversity from minerals development.</p> | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP, including <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i>.</p> |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>+</p>      | <p>Unlike in the strategic corridors, the historic environment has played a key role in defining the ECAs. The ECAs do not seek to avoid designated assets, but rather embrace the GI principle of looking more widely at networks and connections, and about improving whole areas at a landscape scale. The restoration priorities within the strategic corridors have only a limited role to play in enhancing the historic environment, whereas the ECAs could provide a more specific set of objectives (although these have not yet been fully developed and in some cases are quite limited- and less aspirational than those in the strategic corridors).</p>   | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p>                               |
| <p><b>4: Material assets</b><br/>Ensure efficient use of land through</p>   | <p>0</p>      | <p>Agricultural land quality varies across the ECAs, and has not been taken into account in either their definition or the approach to their restoration. As such, the effects are likely to be similar to those for the</p>  | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP, including <i>Policy</i></p>  |

<sup>33</sup> Worcestershire Green Infrastructure Partnership (2012) Worcestershire's Green Infrastructure Framework 2

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| <p>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>corridors – i.e. the ECAs themselves will have no discernible effects.</p> <p>As a policy designation, rather than an environmental designation, Green Belt has played no part in shaping the ECAs or guiding their approach to restoration. In this respect, the ECAs perform no differently to the strategic corridors. Although the ECAs cover all the non-urban areas of the county and therefore all of the county's Green Belt, the strategic corridors also include significant areas of Green Belt and no significant distinction can be made in the likely impact of the different approaches.</p>   | <p><i>MLP 20 Agriculture and Soils.</i> As noted elsewhere in this SA, consideration could be given to including the protection of green belt land within a new or existing policy.</p>                                     |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | <p>-/+</p> | <p>The ECAs cover all non-urban areas of the county and, as such, do not seek to avoid areas that are sensitive to water and air pollution, including source protection zones and Air Quality Management Areas. This does not mean that these would be affected by minerals development, and other MLP policies should help to ensure their protection. Nevertheless, if all else was equal, development would ideally be directed away from these potentially sensitive receptors. Water quality, however, is one of the green infrastructure aspects that could be enhanced through appropriate development and restoration, and the ECAs do set out specific objectives for 'blue infrastructure'. As with the strategic corridors, air quality does not feature as a standalone category in the ECA restoration objectives, although it does have a 'transport' category that could encourage more sustainable movement and thereby reduce the risk of impacts non AQMAs (although the objectives for transport do not appear to be focussed on HGV movements typical of minerals extraction).</p> | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP, including <i>Policy MLP 22 Water Environment</i> and <i>Policy MLP 16 Health and Quality of Life</i>.</p> |
| <p><b>6: Climate Change and energy</b></p>   | <p>?/+</p> | <p>The ECAs do not directly reflect climate change issues. Nor do their restoration objectives consider climate change as a standalone category (although other elements of the objectives, including transport, would</p>   | <p>The potential climate change impacts and benefits of mineral development would be mitigated through other policies in the</p>  |

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| <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>have beneficial effects on this climate change SA objective).<br/>                 The exact climate change impacts of minerals development can only be predicted once the location and detail of workings is known. The ECAs cover all non-urban areas of the county and therefore no meaningful appraisal of specific impacts from specific sites can be made.<br/>                 The climate change effects will depend upon working practices and transport modes.</p>   | <p>MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i>.</p>   |
| <p><b>7: Flooding</b><br/>                 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>Similar to the strategic corridors' 'water environment' priorities, the ECAs have 'blue infrastructure' objectives for each area which can help to contribute to flood improvements through natural processes. The ECAs cover all non-urban areas of the county, and so include all areas of floodzones. 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>The impacts of flooding on mineral development – and of minerals development on flooding – would be considered at a site-specific scale and would be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i>.</p> |
| <p><b>8: Access to Services</b><br/>                 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>The ECAs cover all non-urban areas of the county and, as such, include most of the county's rural public rights of way. Rights of way have not informed the ECAs, but the objectives for each ECA do include access and recreation. Development within the ECAs could both threaten existing routes (although mitigation elsewhere in the plan should limit this), and improve them through the objectives. The policy itself is unlikely to have a significant effect on this SA objective.</p>   | <p>The impacts of mineral development would be mitigated through other policies in the MLP, including <i>Policy MLP 17 Access and Recreation</i><b>Error! Reference source not found..</b></p>   |
| <p><b>9: Health and amenity</b></p>  | 0 | <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</p>  | <p>The impacts on health as a result of mineral development would be mitigated</p>   |



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| <p>Improve the health and well-being of the population and reduce inequalities in health.</p>   |            | <p>negative, although the MLP will mitigate these through other policies. In the longer term, the ECAs focus on green infrastructure improvements 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). Health has not directly influenced the ECAs, and nor are there any health-specific objectives as part of the approach to restoration.</p>   | <p>through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i>.</p>  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>                  | <p>0</p>   | <p>The ECAs themselves would not be considered likely to significantly impact this SA objective.</p>  | <p>The waste impacts of mineral development would be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>.</p>   |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>  | <p>?/+</p> | <p>The ECAs cover all non-urban areas of the county and so do not have the opportunity to direct development to locations that could be better served by sustainable transport, or which minimise unnecessary vehicle movements. Without the restrictions imposed by the strategic corridors, however, developing within ECAs could allow minerals to be extracted closer to the point of use. Housing growth around Tenbury Wells, for example, would require significant transport distances from the strategic corridors, but smaller-scale opportunities close to the town could become available within the ECAs.</p>                                      | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP including <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i>.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and</p> | <p>+/-</p> | <p>The ECAs cover all non-urban areas of the county and, as such, would potentially enable mineral development wherever viable resources were found to exist. This could open up more possibilities for extraction than would be the case under the strategic corridors, thereby helping to ensure that minerals were available to facilitate growth and infrastructure. The lack of locational focus, however, means that minerals extraction and processing could potentially prevent or compromise the delivery of other growth and infrastructure development. This minor negative is considered less significant than the potential positive effect of</p> | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP.</p>   |

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| <p>rural.</p>   |            | <p>increased minerals provision. The current strategic corridors, for example, exclude great swathes of the county's potential Mercia Mudstone resource. This is justified, in part, by the existence of substantial permitted reserves. These reserves, however, are related to only two operational workings. Including all of the county's potential clay resources would better insulate Worcestershire against any changes to the availability of existing permitted reserves for commercial or other reasons.</p>  |   |
| <p><b>I3: Provision of housing</b><br/>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>+/-</p> | <p>The ECAs cover all non-urban areas of the county and, as such, would potentially enable mineral development wherever viable resources exist. This could open up more possibilities for extraction than would be the case under the strategic corridors, thereby helping to ensure that minerals were available to facilitate housing growth, and the development of the clean, safe, and pleasant local environments that are needed to ensure housing is sustainable. The lack of locational focus, however, means that minerals extraction and processing could potentially prevent or compromise the delivery of housing and related development. This minor negative is considered less significant than the potential positive effect of increased minerals provision.</p> | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP.</p> |
| <p><b>I4: Participation by all</b><br/>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> | <p>0</p>   | <p>No impacts on this SA objective have been identified.</p>   | <p>The impacts of mineral development in any given location would be mitigated through other policies in the MLP.</p> |

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| <p><b>15: Technology, innovation and inward investment</b><br/>                 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 impacts of mineral development in any given location would be mitigated through other policies in the MLP. |
| <p><b>16: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p>   | 0 | No impacts on this SA objective have been identified. | The impacts of mineral development in any given location would be mitigated through other policies in the MLP. |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p>   | 0 | No impacts on this SA objective have been identified. | The impacts of mineral development in any given location would be mitigated through other policies in the MLP. |

**Appraisal of policies: Policy MLP 2 Avon and Carrant Brook Strategic Corridor**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
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| <p><b>I: Landscape</b><br/>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, actually 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.</p> <p>The corridor contains part of Overbury Court Grade II* listed park and garden and wholly or partially covers seven parks and gardens that may be of local importance (Wood Norton Hall, Wick House, Lower Hill in Wick, Endon Hall, Hampton Hall, two parts of Beckford Hall, and Norton Park).</p> <p>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. The effects, however are likely to more positive than those predicted in the appraisal of <i>Policy MLP 1 Strategic Location of Development</i>, because the MLP envisages that five of the six specific priorities for this corridor will make a "<i>strong positive contribution</i>" to the landscape GI function.</p> | <p>The landscape and visual impacts of minerals development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 19 Landscape and Policy MLP 16 Health and Quality of Life.</p> <p>Consideration could be given to removing that part of the corridor which overlays Overbury Court listed park and garden.</p> |

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| <p><b>2: Biodiversity and geodiversity</b><br/>                 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 Record of Assessment - Consultation Draft notes that "The Strategic Corridor is not considered to be hydrologically linked to the SAC", and effects from airborne particulates are similarly considered unlikely due to the distances involved.</p> <p>There are five SSSIs wholly within the corridor (Eckington Railway Cutting; Beckford Gravel Pit; Rectory Farm Meadows; Cropthorne New Inn Section; and the Avon Valley). There are four SSSIs that lie outside but directly adjacent to the corridor (Upham Meadow &amp; Summer Leasow; Tiddesley Wood; Bredon Hill; and Windmill Hill). There are also four Local Geological Sites within the corridor, as well as numerous Local Wildlife Sites within and adjacent to the corridor.</p> <p>Because it is not known where development might occur within the corridor - and none of the three specific sites or two preferred areas are found here - specific likely effects on receptors cannot be predicted. The effects, however are likely to be more positive than those predicted in the appraisal of <i>Policy MLP 1 Strategic Location of Development</i>, because the MLP envisages that five of the six specific priorities for this corridor will make a "<i>strong positive contribution</i>" to the biodiversity GI function. Only one of the priorities, however, is likely to make a "<i>potential positive contribution</i>" to the geodiversity function.</p> <p>The MLP's approach to 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 effects of mineral development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 18 Biodiversity and Policy MLP 21 Geodiversity.</p> |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic</p>                  | <p>0</p>   | <p>There are numerous listed buildings, scheduled ancient monuments, and conservation areas within and around the corridor. 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, and other policies in the MLP should ensure that full account is taken of the historic environment.</p>  | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p>                 |

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| <p>environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</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. The MLP notes that the priorities for this corridor are likely to have only a <i>"potential positive contribution"</i> to the historic environment. 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. Nevertheless, on balance, there are no likely significant effects on the historic environment resulting from this corridor policy.</p>                                       |  |
| <p><b>4: Material assets</b><br/>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 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, however, seek to <i>"Facilitate arable or horticultural land use that optimises opportunities to restore primary hedgerows, integrate wide field margins and create wetland habitats"</i>, and the MLP notes that this will make a <i>"strong positive contribution"</i> to the agriculture GI function.</p> <p>The corridor does not include any Green Belt land.</p> | <p>The effects of mineral development within the corridor – will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>.</p>   |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>+/?</p> | <p>There are no source protection zones within the corridor. The MLP has predicted that two of the priorities for this corridor will make a <i>"strong positive contribution"</i> to the water environment GI function, through flood betterment and water quality improvement, as well as a return to natural flooding cycles.</p> <p>The corridor does not include any Air Quality Management Areas, but is very close to the Tewkesbury Town Centre AQMA and to the Port Street (Evesham) AQMA. This corridor is too large to identify specific</p>   | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 22 Water Environment</i> and <i>Policy MLP 16 Health and Quality of Life</i>.</p> |

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|   |     | effects from minerals development on the AQMAs or on air quality in general, but other policies within the MLP should ensure that development takes air quality fully into account.  |  |
| <p><b>6: Climate Change and energy</b><br/>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 corridor is too large to enable any meaningful appraisal of specific effects to be made, but some more general observations are possible.</p> <p>The climate change effects will depend upon working practices and transport modes. Transport issues are covered under SA objective 11 below and, as above, 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 MLP has identified that three of the priorities for the corridor could make a "strong positive contribution" to climate change resilience and mitigation, due to biodiversity gain, flood betterment and returning to natural flooding cycles, and the conservation, restoration and enhancement of tree belts.</p> | Any potential negative climate change effects of mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i> .                     |
| <p><b>7: Flooding</b><br/>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 floodzones 2 and 3, primarily related to the river Avon, but the flooded area 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 MLP suggests that two of the priorities for this corridor will make a "strong positive contribution" to the water environment, due in part to the opportunities for flood betterment and a return to natural flooding cycles.</p>  | The effects of flooding on mineral development – and of minerals development on flooding – will be considered at a site-specific scale and will be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i> . |
| <p><b>8: Access to</b></p>  | +/- | Public rights of way extend across the county in all areas, inside and   | Any potential negative effects of mineral  |

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| <p><b>Services</b><br/>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>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. The MLP has included a priority within this corridor to "improve the network of public access routes" and has identified that this is likely to make a "strong positive contribution" to the access and recreation GI function. The specific recognition of public access is welcomed, and should ensure that development in this corridor achieves more than simply the minimisation of harm to rights of way, and secures actual enhancement.</p>  | <p>development within this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 17 Access and Recreation</i><b>Error! Reference source not found..</b></p>             |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0 | <p>In the short term, effects on health and amenity may generally be expected to be negative, although the MLP will mitigate these through other policies.<br/>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).<br/>There is actually a degree of cohesion between this corridor and those areas where health has been rated as 'good' or 'less good' (rather than 'excellent') in a map of high-level health indicators<sup>34</sup>. Caution needs to be exercised, however, when seeking to identify any particular pattern, and the correlation varies considerably. Health issues may be too localised to allow for any meaningful analysis against the corridor. No clear effects on this SA objective can be established.</p> | <p>Any negative effects on health arising from mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i>.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and</p>  | 0 | <p>No effects on this SA objective have been identified.</p>   | <p>The waste impacts of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>.</p>                             |

<sup>34</sup> 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



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| <p>composting, 4) recovery, 5) disposal.</p>   |          |   |  |
| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | <p>?</p> | <p>Much of the corridor is close to the river Avon, which could provide opportunities for sustainable transport movements, although evidence suggests that a significant shift to water-borne transport is unlikely within the plan period. Equally, due to its size, there are some areas within the corridor that are less accessible to the strategic transport network than others, which could see transport emissions increase, thereby exacerbating climate change. Without further information, it is not possible to predict the likely transport effects arising from this corridor.</p>  | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP including <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i>.</p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+</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 (although there are no allocated sites or preferred areas within this corridor). 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. 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.</p> | <p>No mitigation has been identified.</p>  |
| <p><b>I3: Provision of housing</b><br/>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>+</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 (although there are no allocated sites or preferred areas within this corridor). 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>No mitigation has been identified.</p>  |

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| <p><b>14: Participation by all</b><br/>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.   | No mitigation has been identified. |
| <p><b>15: Technology, innovation and inward investment</b><br/>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 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. | No mitigation has been identified. |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>  | 0 | No effects on this SA objective have been identified.   | No mitigation has been identified. |

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| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p> | <p>0</p> | <p>No effects on this SA objective have been identified.</p> | <p>No mitigation has been identified.</p> |
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### Appraisal of policies: Policy MLP 3 Lower Severn Strategic Corridor

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</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 probably a sufficient distance to mean that development is unlikely to fundamentally compromise the purposes of the AONB designations, although all proposals must be considered for their potential impacts, and visibility from both AONBs is possible.</p> <p>The corridor contains three specific sites (Clifton East, Clifton South, and Land at Ryall North), as well as one preferred area (Ryall East). A more detailed appraisal of each of these is found later in this SA, and includes the recognition of potential cumulative landscape effects as a result of development at Clifton East and Clifton South.</p> <p>The corridor is adjacent to and contains a very small part of Croome Court Grade I listed park and garden (around 7.6 hectares). It is also adjacent to Pirton Park Grade II listed park and garden.</p> <p>It wholly encompasses The Nash, a park and garden that may be of local importance, and is adjacent to two others: Rhydd Court and The Park.</p> <p>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. The MLP envisages that five of the six specific priorities for this corridor will make a "<i>strong positive contribution</i>" to the landscape GI function.</p> | <p>The landscape and visual impacts of minerals development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 19 Landscape and Policy MLP 16 Health and Quality of Life.</p> <p>Consideration could be given to removing that part of the corridor which overlays Croome Court listed park and garden.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | +/-                          | <p>There are no SACs within the corridor or in close proximity.</p> <p>There are two SSSIs wholly within the corridor (Upton Ham and Ashmoor Common). The corridor also partly covers the Old River Severn, Upper Lode SSSI at its southern extremity.</p> <p>The corridor encompasses a single Local Geological Site (Ashmoor Common), which actually falls within one of the preferred areas, Clifton East. There are also numerous Local Wildlife Sites, including the river Severn LWS, which runs the whole length of the corridor.</p> <p>For the three specific sites and one preferred area within the corridor,</p>   | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 18 Biodiversity and Policy MLP 21 Geodiversity.</p>  |

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|  |            | <p>concerns have been raised over the proximity of Clifton East and Clifton South to the Ashmoor Common SSSI, and also the potential serious effects that could arise as a result of dewatering on nearby marshland or wet woodland LWS, including cumulative impacts from development at Clifton East and Clifton South.</p> <p>The MLP envisages that four of the six specific priorities for this corridor will make a "strong positive contribution" to the biodiversity GI function. Only one of the priorities, however, is likely to make a "strong positive contribution" to the geodiversity function. In fact, there is a high degree of uncertainty over how far the priorities will contribute to geodiversity, with four of the six being rated as "unclear".</p> <p>The MLP's approach to 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. Potential risks to designated sites have already been identified for more specific sites within the corridor, and these will need to be given careful consideration at application stage, including the consideration of cumulative impacts.</p> |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-/?</p> | <p>There are numerous listed buildings, scheduled ancient monuments, and conservation areas within and around the corridor. 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 certain specific sites and preferred areas are mapped), and other policies in the MLP should ensure that full account is taken of the historic environment. Issues identified in the appraisal of specific sites and the preferred area falling within this corridor include potential organic remains at risk from dewatering, and potential cumulative effects on listed buildings, including from development at Clifton East and Clifton South.</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. The MLP notes that the priorities for this corridor are likely to make only a "potential positive</p>   | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p> |

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|   |            | <p><i>contribution</i>" to the historic environment. 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. Nevertheless, on balance, there are no likely significant effects on the historic environment resulting from this corridor policy.</p>  |  |
| <p><b>4: Material assets</b><br/>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 corridor. 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 location of three specific sites and one preferred area are, however, known; the appraisal of these raises concerns over loss of best and most versatile land, with Clifton east and Ryall North having particularly high quality Grade I land.</p> <p>Most of the priorities for this corridor are not considered by the MLP as likely to make a strong contribution to agriculture, but the priority to "<i>Facilitate arable or horticultural land use that optimises opportunities to restore primary hedgerows, integrate wide field margins and create wetland habitats</i>", should make a "<i>strong positive contribution</i>".</p> <p>The corridor does not include any Green Belt land.</p> | <p>The effects of mineral development within the corridor – will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>.</p>   |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>+/-</p> | <p>There are no source protection zones within the corridor. The MLP has predicted that three of the priorities for this corridor will make a "<i>strong positive contribution</i>" to the water environment GI function, through flood betterment and water quality improvement, as well as a return to natural flooding cycles. The corridor's proximity to the river Severn should also be considered.</p> <p>The corridor includes three specific sites and one preferred area, and the more detailed appraisal of these noted the potential for cumulative impacts to arise as a result of development at Clifton East and Clifton South.</p> <p>The corridor does not include any Air Quality Management Areas, but</p>  | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 22 Water Environment</i> and <i>Policy MLP 16 Health and Quality of Life</i>.</p> |

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|  |            | <p>could potentially affect AQMAs at Lowesmoor/Rainbow Hill, Worcester; Bridge Street/Dolday, Worcester; and Tewkesbury Town Centre, as well as those further afield.</p> <p>This corridor is too large to identify specific effects from minerals development on air quality in general, but other policies within the MLP should ensure that development takes air quality fully into account.</p>   |  |
| <p><b>6: Climate Change and energy</b><br/>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 exact climate change effects of minerals development can only be predicted once the location and detail of workings is known. The corridor is too large to enable any meaningful appraisal of specific effects to be made, but some more general observations are possible. The corridor does include three specific sites and a preferred area, which have been subject to appraisal. This did not find any likely significant climate change effects particular to the sites.</p> <p>The climate change effects will depend upon working practices and transport modes. Transport issues are covered under SA objective 11 below and, as above, not enough is known about the sites to judge whether or not they could, for example, exploit opportunities for renewable energy.</p> <p>The MLP has identified that three of the priorities for the corridor could make a "strong positive contribution" to climate change resilience and mitigation, due to biodiversity gain, flood betterment and returning to natural flooding cycles, and the conservation, restoration and enhancement of tree belts.</p> | <p>The potential negative climate change effects of mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i>.</p>                     |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks</p>                                    | <p>+/?</p> | <p>The corridor includes significant areas of floodzones 2 and 3, primarily related to the river Severn, with floodzones 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 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</p>  | <p>The effects of flooding on mineral development – and of minerals development on flooding – will be considered at a site-specific scale and will be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i>.</p> |

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| <p>or contribute to surface water flooding in all other areas.</p>  |            | <p>where development will occur within this corridor.<br/>                 Three specific sites and one preferred area have been mapped within the corridors, but the SA of these did not identify any significant sustainability effects in relation to flooding (although Land at Ryall North and Clifton South both include floodzones), provided other MLP policy is applied.<br/>                 The MLP evidence suggests that three of the priorities for this corridor will make a "strong positive contribution" to the water environment, due in part to the opportunities for flood betterment and a return to natural flooding cycles.</p>   |   |
| <p><b>8: Access to Services</b><br/>                 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 (although mitigation elsewhere in the plan should limit this), and improve them as part of green infrastructure enhancements during development and restoration.<br/>                 The corridor includes three specific sites and one preferred area, which have been subject to dedicated appraisal elsewhere in this report. These appraisals do show, however, that Clifton East and Clifton South both have public rights of way passing through them that will almost certainly be compromised by development, and mitigation will be required.<br/>                 The MLP has included two priorities within this corridor that will make a "strong positive contribution" to access and recreation. The specific recognition of public access is welcomed, and should ensure that development in this corridor achieves more than simply the minimisation of harm to rights of way, and secures actual enhancement.</p> | <p>Any potential negative effects of mineral development within this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 17 Access and Recreation</i><b>Error! Reference source not found..</b></p> |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in</p>   | <p>0</p>   | <p>In the short term, effects on health and amenity may generally be expected to be negative, although the MLP will mitigate these through other policies.<br/>                 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</p>  | <p>Any negative effects on health arising from mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i>.</p>                               |



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| health.  |   | <p>quantity of and/or accessibility to green space).</p> <p>The corridor is almost wholly within an area where health has been rated as 'good' in a map of high-level health indicators<sup>35</sup>. Caution needs to be exercised, however, when seeking to identify any particular pattern, and health issues may be too localised to allow for any meaningful analysis against the corridor. No clear effects on this SA objective can be established.</p> <p>The appraisal of the three specific sites and one preferred area that fall within this corridor identified various localised issues, but did not identify any likely significant effects on health.</p>  |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | No effects on this SA objective have been identified.  | The waste impacts of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i> .  |
| <p><b>11: Traffic and transport</b><br/>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. Without further information, it is not possible to predict the likely transport effects arising from this corridor.</p> <p>The appraisal of the three specific sites and one preferred area that fall within this corridor identified various localised issues, but did not identify any likely significant effects on traffic and transport.</p> | The effects of mineral development in the corridor will be mitigated through other policies in the MLP including <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i> . |

<sup>35</sup> 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

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| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>++</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. All of the MLP's specific sites (Clifton East, Clifton South, and Land at Ryall North), as well as one of the preferred areas (Ryall East) fall within this corridor. While this does not guarantee minerals extraction, it does provide a very strong indication that development in these locations is likely, which will further support this SA objective.</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.</p> | <p>No mitigation has been identified.</p> |
| <p><b>I3: Provision of housing</b><br/>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>++</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 needed to deliver housing and associated development that can help to ensure clean, safe and pleasant local environments. All of the MLP's specific sites (Clifton East, Clifton South, and Land at Ryall North), as well as one of the preferred areas (Ryall East) fall within this corridor. While this does not guarantee minerals extraction, it does provide a very strong indication that development in these locations is likely, which will further support this SA objective.</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.</p>   | <p>No mitigation has been identified.</p> |

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| <p><b>14: Participation by all</b><br/>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.   | No mitigation has been identified. |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>          | 0/+ | 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. | No mitigation has been identified. |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>  | 0   | No effects on this SA objective have been identified.   | No mitigation has been identified. |

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| <p><b>I7: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and antisocial behaviour.</p> | <p>0</p> | <p>No effects on this SA objective have been identified.</p> | <p>No mitigation has been identified.</p> |
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## Appraisal of policies: Policy MLP 4 North East Worcestershire Strategic Corridor

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | +/?                          | <p>The strategic corridor is a long way from both the Cotswolds and the Malvern Hills AONBs, and significant effects on either can probably be ruled out.</p> <p>The corridor does not contain any listed parks and gardens, but is adjacent to Hagley Hall Grade I listed park and garden, which borders the corridor's northern boundary. There is potential for negative effects to arise on this asset as a result of development within the corridor at this location. Impacts may also be possible on the Grade II* listed Hewell Grange park and garden, which lies just east of the corridor.</p> <p>There are no parks and gardens that may be of local importance within or immediately adjacent to the corridor (apart from those that are also national parks and gardens).</p> <p>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. None of the MLP's specific sites or preferred areas are found within the corridor. The effects are likely to be more positive than those predicted in the appraisal of <i>Policy MLP 1 Strategic Location of Development</i>, because the MLP envisages that three of the four specific priorities for this corridor will make a "strong positive contribution" to the landscape GI function.</p> | <p>The landscape and visual impacts of minerals development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 19 Landscape and Policy MLP 16 Health and Quality of Life.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | +/?                          | <p>There are no SACs within the corridor or in close proximity.</p> <p>There are two SSSIs wholly within the corridor (Burcot Lane Cutting and Madeley Heath Pit) and others at varying distances from the corridor, with Feckenham Forest being adjacent, and Sling Gravel Pits also being particularly close.</p> <p>There are two Local Geological Sites within the corridor (Madeley Heath and Shepley Sandpit and Knoll), as well as others just beyond the corridor boundary, and there are numerous Local Wildlife Sites within and adjacent to the corridor.</p>  | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 18 Biodiversity and Policy MLP 21 Geodiversity.</p>                                  |

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|   |            | <p>Because it is not known where development might occur within the corridor - and none of the three specific sites or two preferred areas is found here - specific likely effects on receptors cannot be predicted. The effects, however are likely to be more positive than those predicted in the appraisal of <i>Policy MLP 1 Strategic Location of Development</i>, because the MLP envisages that three of the four specific priorities for this corridor will make a "strong positive contribution" to the biodiversity GI function. None of the priorities, however, is likely to make a "potential positive contribution" to the geodiversity function.</p> <p>The MLP's approach to 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><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>0</p>   | <p>There are numerous listed buildings, scheduled ancient monuments, and conservation areas within and around the corridor. 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, and other policies in the MLP should ensure that full account is taken of the historic environment.</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. The MLP notes that the four priorities for this corridor are likely to make only a "potential positive contribution" to the historic environment. 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. Nevertheless, on balance, there are no likely significant effects on the historic environment resulting from this corridor policy.</p> | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p>        |
| <p><b>4: Material assets</b><br/>Ensure efficient use of land through safeguarding of mineral reserves, the</p>   | <p>-/+</p> | <p>Agricultural land quality varies across the corridor. 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 the MLP finds that one of the priorities for the corridor, to "Optimise opportunities to conserve all remaining areas of</p>   | <p>The effects of mineral development within the corridor – will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>.</p> |

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| <p>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><i>permanent pasture across the corridor and to create permanent pasture in the Enclosed Commons landscape type and Settled Farmlands with Pastoral Land Use landscape type</i>" is likely to make a "strong positive contribution" to agriculture, another of the priorities, "Optimise opportunities for the creation of sub-regional scale accessible semi-natural green space taking account of long-term management of the site and the impacts of long-term use for public access" is thought to have a "likely conflict" with agriculture.</p> <p>The corridor is wholly within the Green Belt. The NPPF allows 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><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | <p>--</p> | <p>Almost the entire corridor falls within Source Protection Zone 3. It also includes parts of at least five areas of Source Protection Zone 2 and five areas of Source Protection Zone 1.</p> <p>The MLP has established four priorities for this corridor, but none of these is claimed to make a "strong positive contribution" to the water environment, with all of them making only a "potential positive contribution".</p> <p>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 'AQMA No 4 Worcester Road' and Stoke Heath AQMAs are found.</p> <p>The corridor is too large to identify specific effects from minerals development on the AQMAs, or on air quality in general, but other</p>   | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 22 Water Environment</i> and <i>Policy MLP 16 Health and Quality of Life</i>. Whether this is sufficient to offset risks to air and water quality is unclear especially as the corridor priorities do not offer any particularly positive outcomes for the water environment in a location which has particular sensitivities due to its SPZs. Further consideration should be given to seeking positive water and air quality outcomes within this corridor.</p> |

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|   |     | <p>policies within the MLP should ensure that development takes air quality fully into account.</p>  |  |
| <p><b>6: Climate Change and energy</b><br/>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 corridor is too large to enable any meaningful appraisal of specific effects to be made, but some more general observations are possible.</p> <p>The climate change effects will depend upon working practices and transport modes. Transport issues are covered under SA objective 11 below and, as above, not enough is known about how and where sites may be developed to judge whether or not they could, for example, exploit opportunities for renewable energy.</p> <p>The MLP has identified that two of the priorities for the corridor could make a "strong positive contribution" to climate change resilience and mitigation, through buffering and connecting habitats, and conserving hedgerows and trees.</p> | <p>Any potential negative climate change effects of mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i>.</p>                     |
| <p><b>7: Flooding</b><br/>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 two relatively small areas of floodzone around Catshill and Lickey End. 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 within this corridor.</p> <p>The MLP suggests that none of the priorities for this corridor will make a "strong positive contribution" to the water environment, and there is no priority that explicitly seeks to secure flood betterment.</p>                          | <p>The effects of flooding on mineral development – and of minerals development on flooding – will be considered at a site-specific scale and will be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i>.</p> |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable</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</p>  | <p>Any potential negative effects of mineral development within this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 17 Access and</i></p>   |



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| access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.         |   | enhancements during development and restoration. The MLP has included a priority within this corridor to " <i>Optimise opportunities for the creation of sub-regional scale accessible semi-natural green space taking account of long-term management of the site and the impacts of long-term use for public access</i> " and has identified that this is likely to make a " <i>strong positive contribution</i> " to access and recreation. The specific recognition of public access is welcomed, and should ensure that development in this corridor achieves more than simply the minimisation of harm to rights of way, and secures actual enhancement. | <b>Recreation</b> <b>Error! Reference source not found..</b>  |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the population and reduce inequalities in health.                               | 0 | In the short term, effects on health and amenity may generally be expected to be negative, although the MLP will mitigate these through other policies.<br>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).<br>There is no discernible cohesion between this corridor and GI-related health indicators in a high-level map <sup>36</sup> . No clear effects on this SA objective can be established.   | Any negative effects on health arising from mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i> . |
| <b>10: Waste</b><br>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.  | The waste impacts of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i> .                             |
| <b>11: Traffic and transport</b><br>Reduce the need to   | ? | 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   | The effects of mineral development in the corridor will be mitigated through other policies in the MLP including <i>Policy MLP 24</i>   |

<sup>36</sup> 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

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| <p>travel and move towards more sustainable travel patterns.</p>   |                                      | <p>make movement southwards difficult.<br/>The corridor is very well served by the motorway network, with access to the M5 and M42.<br/>The corridor is not so large that there are areas with particularly poor access to the strategic transport network, helping to minimise transport emissions. Without further information, it is not possible to predict the likely transport effects arising from this corridor.</p>   | <p><i>Transport To and From Site and Policy MLP 25 Transport Within Mineral Sites.</i></p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p style="text-align: center;">+</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 (although there are no allocated sites or preferred areas within this corridor). 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 area.</p> | <p>No mitigation has been identified.</p>  |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</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 to deliver housing and the development needed to secure clean, safe and pleasant local environments.<br/>The corridor relates well to potential housing development in Bromsgrove and surrounding settlements in particular, but also to</p>  | <p>No mitigation has been identified.</p>  |

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|   |   | settlements further afield, including Redditch, Kidderminster, and the West Midlands conurbation. This last one 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. |                                    |
| <b>14: Participation by all</b><br>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.   | No mitigation has been identified. |
| <b>15: Technology, innovation and inward investment</b><br>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology                       | 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.  | No mitigation has been identified. |

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| initiatives.   |   |   |                                    |
| <b>16: Population (skills and education)</b><br>Raise the skills levels and qualifications of the workforce. | 0 | No effects on this SA objective have been identified. | No mitigation has been identified. |
| <b>17: Population (crime &amp; fear of crime)</b><br>Reduce crime, fear of crime and antisocial behaviour.   | 0 | No effects on this SA objective have been identified. | No mitigation has been identified. |

## Appraisal of policies: Policy MLP 5 North West Worcestershire Strategic Corridor

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | +/-                          | <p>The strategic corridor is a long way from both the Cotswolds and the Malvern Hills AONBs, and significant effects on either can probably be ruled out.</p> <p>The corridor contains one preferred area (Land North of Wolverley Road). A more detailed appraisal of this is found later in this SA, and recognises that most of the preferred area (around 58%) falls within part of Sionhill House undesignated park and garden of local importance. This means that the preferred area could have a significant effect on the landscape. The remainder of this local asset is wholly within the corridor. There are no listed parks and gardens within or immediately adjacent to the corridor.</p> <p>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. The MLP envisages that six of the seven specific priorities for this corridor will make a "<i>strong positive contribution</i>" to the landscape GI function.</p> | <p>The landscape and visual impacts of minerals development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 19 Landscape and Policy MLP 16 Health and Quality of Life.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | +/?                          | <p>There are no SACs within the corridor or in close proximity.</p> <p>There are eight SSSIs wholly or substantially within the corridor (Hartlebury Common &amp; Hillditch Coppice; River Stour Flood Plain; Wilden Marsh &amp; Meadows; Devil's Spittleful; Stourvale Marsh; Puxton Marshes; Hurcott Pasture; and Hurcott &amp; Podmore Pools), with a further two immediately adjacent (Areley Wood to the south west, and Kinver Edge to the north).</p> <p>There are six Local Geological Sites within the corridor (Bewdley Road Cutting West; Bewdley Road Cutting East; Blackstone Rock; Leapgate Old Railway Line; Hartlebury Common; and Redstone Rock), with a further two in close proximity, and there are numerous Local Wildlife Sites within and adjacent to the corridor.</p> <p>Although one of the preferred areas is within the corridor, in general it is not known where development might occur (and development may not</p>   | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 18 Biodiversity and Policy MLP 21 Geodiversity.</p>                                  |

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|  |            | <p>necessarily occur within the preferred area). As such, specific likely effects on receptors cannot be predicted. The preferred area, 'Land north of Wolverley road', has been subject to its own appraisal in this report, which found a number of localised issues, but no likely significant effects on biodiversity or geodiversity.</p> <p>Any biodiversity effects are likely to be more positive than those predicted in the appraisal of <i>Policy MLP 1 Strategic Location of Development</i>, because the MLP envisages that four of the seven specific priorities for this corridor will make a "strong positive contribution" to biodiversity. One of the priorities, to "Optimise opportunities to improve legibility and understanding of geodiversity, particularly in the Abberley and Malvern Hills Geopark, retaining geological and geomorphological features and creating public access where appropriate" is also likely to make a "potential positive contribution" to the geodiversity function.</p> <p>The MLP's approach to 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><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-/?</p> | <p>There are numerous listed buildings, scheduled ancient monuments, and conservation areas within and around the corridor. 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 one of the preferred areas is within the corridor), and other policies in the MLP should ensure that full account is taken of the historic environment. Various local issues have been identified in the appraisal of the preferred area, Land north of Wolverley Road, including a heightened potential for prehistoric flint artefacts, but no significant negative on this SA objective effects have been predicted.</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. The MLP notes that the priorities for this corridor are likely to make only a "potential positive contribution" to the historic environment. Landscape-scale restoration can</p>  | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p> |

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|   |     | help to improve the setting of the historic environment, and there are close linkages between landscape character and historic landscape character. Nevertheless, on balance, there are no likely significant effects on the historic environment resulting from this corridor policy.  |  |
| <p><b>4: Material assets</b><br/>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. 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 location of one preferred area (Land north of Wolverley Road) is, however, known; the appraisal of this preferred area raises concerns over the potential loss of best and most versatile land, although it is unclear whether that preferred area falls within grade 3a or grade 3b. Most of the priorities for this corridor are not considered by the MLP as likely to make a strong contribution to agriculture, but the priority to "Facilitate arable or horticultural land use that optimises opportunities to restore primary hedgerows, integrate wide field margins and create heathland habitats" should make a "strong positive contribution". This is countered, however, by the priority to "Optimise opportunities for the creation of sub-regional scale accessible semi-natural green space taking account of long term management of the site and the impacts of long term use for public access", which the MLP suggests is likely to conflict with agriculture.</p> <p>The corridor is almost wholly within the Green Belt (around 86% of the corridor is Green Belt land). The NPPF allows 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> | The effects of mineral development within the corridor – will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i> . |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | -/+ | Large areas of the corridor fall within Source Protection Zone 3. It also includes parts of eight areas of Source Protection Zone 2 and eight areas   | The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 22</i>                               |

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|  |            | <p>of Source Protection Zone 1.</p> <p>Of the MLP's seven priorities for this corridor, only one is claimed to make a "strong positive contribution" to the water environment, and this is to "Optimise opportunities to create wetland habitats that contribute positively to the character and distinctiveness of the landscape, deliver net biodiversity gain, flood betterment and water quality improvements". This single priority, however, does demonstrate a commitment to improving water quality.</p> <p>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, but other policies within the MLP should ensure that development takes air quality fully into account.</p> <p>The appraisal of the one preferred area in this corridor (Land north of Wolverley Road) highlighted similar issues to those for the corridor as a whole and did not predict any likely significant sustainability effects against this objective.</p> | <p><i>Water Environment and Policy MLP 16 Health and Quality of Life.</i> Delivery of the corridor priority to deliver water quality improvements is especially important given the extent of SPZs within the corridor.</p>                                |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated</p> | <p>+/?</p> | <p>The exact climate change effects of minerals development can only be predicted once the location and detail of workings is known. The corridor is too large to enable any meaningful appraisal of specific effects to be made, but some more general observations are possible. The corridor does include one preferred area (Land north of Wolverley Road), which has been subject to appraisal. This did not find any likely significant climate change effects particular to the preferred area.</p> <p>The climate change effects will depend upon working practices and transport modes. Transport issues are covered under SA objective 11</p>   | <p>The potential negative climate change effects of mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i>.</p> |



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| <p>from renewable energy and low-carbon sources.</p>  |            | <p>below and, as above, not enough is known about the sites to judge whether or not they could, for example, exploit opportunities for renewable energy.</p> <p>The MLP has identified that three of the priorities for the corridor could make a "strong positive contribution" to climate change resilience and mitigation, due to biodiversity gain, flood betterment, buffering and connecting habitats and restoring hedgerows and trees.</p>   |  |
| <p><b>7: Flooding</b><br/>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>The corridor includes significant areas of floodzones 2 and 3, primarily related to the river Severn and river Stour, although the total extent of the floodzones 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. The precise effects cannot be predicted without further detail on where development will occur within this corridor.</p> <p>One preferred area falls within the corridor (Land North of Wolverley Road), but the SA of this preferred area did not identify any significant sustainability effects in relation to flooding, provided other MLP policy is applied.</p> <p>The MLP evidence suggests that one of the seven priorities for this corridor will make a "strong positive contribution" to the water environment, due in part to the opportunities for flood betterment.</p> | <p>The effects of flooding on mineral development – and of minerals development on flooding – will be considered at a site-specific scale and will be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i>.</p> |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational</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 (although mitigation elsewhere in the plan should limit this), and improve them as part of green infrastructure enhancements during development and restoration.</p> <p>The corridor includes one preferred area (Land North of Wolverley Road), which has been subject to dedicated appraisal elsewhere in this report. This appraisal raises concerns over the effect of development in this location on a public footpath and bridleway, both of which pass directly through the site and are likely to be compromised in some way by minerals development, and mitigation will be required.</p>  | <p>Any potential negative effects of mineral development within this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 17 Access and Recreation</i><b>Error! Reference source not found..</b></p>  |

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| <p>attainment.</p>  |          | <p>The MLP has included two priorities within this corridor that will make a "strong positive contribution" to access and recreation. The specific recognition of public access is welcomed, and should ensure that development in this corridor achieves more than simply the minimisation of harm to rights of way, and secures actual enhancement.</p>   |   |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>                               | <p>0</p> | <p>In the short term, effects on health and amenity may generally be expected to be negative, although the MLP will mitigate these through other policies.<br/>                 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).<br/>                 The corridor is almost wholly within an area where health has been rated as 'less good' in a map of high-level health indicators<sup>37</sup>. Caution needs to be exercised, however, when seeking to identify any particular pattern, and health issues may be too localised to allow for any meaningful analysis against the corridor. No clear effects on this SA objective can be established.<br/>                 The appraisal of the preferred area that falls within this corridor (Land North of Wolverley Road) identified various localised issues, but did not identify any likely significant effects on health.</p> | <p>Any negative effects on health arising from mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i>.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>The waste impacts of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i>.</p>                             |

<sup>37</sup> 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

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| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | <p>?</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, although evidence suggests that a significant shift to water-borne transport is unlikely within the plan period.</p> <p>The corridor, especially those parts to the west, does not enjoy 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.</p> <p>Without further information, it is not possible to predict the likely transport effects arising from this corridor.</p> <p>The appraisal of the preferred area that falls within this corridor (Land North of Wolverley road) identified various localised issues, but did not identify any likely significant effects on traffic and transport.</p> | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP including <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i>.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | <p>+</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.</p> <p>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. One of the MLP's preferred areas (Land North of Wolverley Road) falls within this corridor. While this does not guarantee minerals extraction, it does provide a very strong indication that development in this location is likely, which will further support this SA objective.</p> <p>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</p>  | <p>No mitigation has been identified.</p>  |

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|  |   | 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 area.   |                                    |
| <p><b>I3: Provision of housing</b><br/>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.</p> <p>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 to deliver housing and the development needed to secure clean, safe and pleasant local environments. One of the MLP's preferred areas (Land North of Wolverley Road) falls within this corridor. While this does not guarantee minerals extraction, it does provide a very strong indication that development in this location is likely, which will further support this SA objective.</p> <p>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.</p> | No mitigation has been identified. |
| <p><b>I4: Participation by all</b><br/>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social</p> | 0 | No effects on this SA objective have been identified.   | No mitigation has been identified. |

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| responsibility in the local community.  |   |  |                                    |
| <p><b>15: Technology, innovation and inward investment</b><br/>                 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. | No mitigation has been identified. |
| <p><b>16: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p>   | 0 | No effects on this SA objective have been identified.  | No mitigation has been identified. |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p>   | 0 | No effects on this SA objective have been identified.  | No mitigation has been identified. |

**Appraisal of policies: Policy MLP 6 Salwarpe Tributaries Strategic Corridor**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | +/-                          | <p>The strategic corridor is a long way from both the Cotswolds and the Malvern Hills AONBs, and significant effects on either can probably be ruled out.</p> <p>The corridor contains all of Westwood Park Grade II listed park and garden, as well as the greater proportion of Hanbury Hall, another Grade II listed park and garden. Hewell Grange Grade II* listed park and garden and Hartlebury Castle Grade II park and garden are both just outside the corridor, to the east and west, respectively. There is potential for negative effects to arise on these assets as a result of development within the corridor at this location.</p> <p>There are also parks and gardens that may be of local importance within and close to the corridor.</p> <p>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. None of the MLP's specific sites or preferred areas is found within the corridor. The effects are likely to be more positive than those predicted in the appraisal of <i>Policy MLP 1 Strategic Location of Development</i>, because the MLP envisages that two of the three specific priorities for this corridor will make a "strong positive contribution" to the landscape GI function.</p> | <p>The landscape and visual impacts of minerals development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 19 Landscape and Policy MLP 16 Health and Quality of Life.</p> <p>Consideration could be given to removing that part of the corridor which overlays Westwood Park and Hanbury Hall listed parks and gardens.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | +/?                          | <p>There are no SACs within the corridor or in close proximity.</p> <p>There are five SSSIs wholly within the corridor (Westwood Great Pool; Upton Warren Pools; Feckenham Forest; Little Royal Farm Pastures; and Oakland Pasture). The major part of Pipershill Common also falls within the corridor, and several other SSSIs lie outside but in close proximity to the corridor.</p> <p>There are two Local Geological Sites within the corridor (Upton Warren Pit and Hadley Quarry) and numerous Local Wildlife Sites within and</p>   | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including Policy MLP 18 Biodiversity and Policy MLP 21 Geodiversity.</p>  |

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|  |            | <p>adjacent to the corridor.</p> <p>Because it is not known where development might occur within the corridor - and none of the three specific sites or two preferred areas is found here - specific likely effects on receptors cannot be predicted. The effects, however are likely to be more positive than those predicted in the appraisal of <i>Policy MLP 1 Strategic Location of Development</i>, because the MLP envisages that two of the three specific priorities for this corridor will make a "strong positive contribution" to the biodiversity GI function. None of the priorities, however, is likely to make a "potential positive contribution" to the geodiversity function.</p> <p>The MLP's approach to 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><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>0</p>   | <p>There are numerous listed buildings, scheduled ancient monuments, and conservation areas within and around the corridor. 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, and other policies in the MLP should ensure that full account is taken of the historic environment.</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. The MLP notes that the three priorities for this corridor are likely to make only a "potential positive contribution" to the historic environment. 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. Nevertheless, on balance, there are no likely significant effects on the historic environment resulting from this corridor policy.</p> | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 23 Historic Environment</i>.</p> |
| <p><b>4: Material assets</b><br/>                 Ensure efficient use of land through</p>   | <p>-/+</p> | <p>Agricultural land quality varies across the corridor. The vast majority is Grade 3, but there is insufficient data to determine which parts of this Grade 3 land are Grade 3a (and hence 'best and most versatile</p>   | <p>The effects of mineral development within the corridor – will be mitigated through other policies in the MLP, including <i>Policy</i></p>                        |

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| <p>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') and which parts are Grade 3b. 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 the MLP finds that one of the priorities for the corridor, to "<i>Optimise opportunities to increase permanent pasture and restore and link lowland meadows</i>" is likely to make a "<i>strong positive contribution</i>" to agriculture, another of the priorities, "<i>Optimise opportunities for the creation of sub-regional scale accessible semi-natural green space taking account of long-term management of the site and the impacts of long-term use for public access</i>" is thought to have a "<i>likely conflict</i>" with agriculture.</p> <p>The corridor is mainly within the Green Belt (around 80% by area). The NPPF allows that "<i>mineral extraction</i>" and "<i>engineering operations</i>" 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><i>MLP 20 Agriculture and Soils.</i></p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | <p>-/?</p> | <p>A small but not insignificant proportion of the corridor falls within Source Protection Zone 3. It also includes parts of at least four areas of Source Protection Zone 2 and four areas of Source Protection Zone 1.</p> <p>The MLP has established four priorities for this corridor. Only one of these is claimed to make a "<i>strong positive contribution</i>" to the water environment. This is the priority to "<i>Conserve, enhance and restore characteristic hedgerow patterns and optimise opportunities to protect, restore, link and buffer relic ancient woodlands</i>". While it is possible that some benefits to water quality and flood alleviation could occur through this priority, the assertion that it will make a "<i>strong positive contribution</i>" to the water environment is questioned, especially when similar priorities in</p>  | <p>The effects of mineral development in the corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 22 Water Environment</i> and <i>Policy MLP 16 Health and Quality of Life</i>. The likely contribution to the water environment resulting from the first priority should be explained more clearly in the commentary and, if it has been overstated, consideration should be given to a priority that would secure benefits for water quality.</p> |



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|  |            | <p>other corridors are stated to only make a "<i>potential</i>" positive contribution. The supporting text does not explain how such a strong contribution would be likely to arise.</p> <p>The corridor includes the Stoke Heath Air Quality Management Area. 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 'AQMA No 4 Worcester Road' is found.</p> <p>The corridor is too large to identify specific effects from minerals development on the AQMAs, or on air quality in general, but other policies within the MLP should ensure that development takes air quality fully into account.</p>   |  |
| <p><b>6: Climate Change and energy</b><br/>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 exact climate change effects of minerals development can only be predicted once the location and detail of workings is known. The corridor is too large to enable any meaningful appraisal of specific effects to be made, but some more general observations are possible.</p> <p>The climate change effects will depend upon working practices and transport modes. Transport issues are covered under SA objective 11 below and, as above, not enough is known about how and where sites may be developed to judge whether or not they could, for example, exploit opportunities for renewable energy.</p> <p>The MLP has identified that two of the priorities for the corridor could make a "<i>strong positive contribution</i>" to climate change resilience and mitigation, through conserving, enhancing and restoring hedgerows and protecting, restoring and buffering woodlands, and through increasing pasture and restoring and linking lowland meadows.</p> | <p>Any potential negative climate change effects of mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i>.</p> |

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| <p><b>7: Flooding</b><br/>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 some relatively small areas of floodzone, including that associated with the river Salwarpe and the Hadley/Elmley Brook.<br/>In the context of the wider corridor, these areas are 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.<br/>The MLP suggests that none of the priorities for this corridor will make a "strong positive contribution" to the water environment, although the contribution to flood betterment may not be significant, and there is no priority that explicitly seeks to secure such improvements.</p> | <p>The effects of flooding on mineral development – and of minerals development on flooding – will be considered at a site-specific scale and will be governed by national policy as well as other policies in the MLP, especially <i>Policy MLP 22 Water Environment</i>.</p> |
| <p><b>8: Access to Services</b><br/>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. The MLP has included a priority within this corridor to "Optimise opportunities for the creation of sub-regional scale accessible semi-natural green space taking account of long-term management of the site and the impacts of long-term use for public access" and has identified that this is likely to make a "strong positive contribution" to access and recreation. The specific recognition of public access is welcomed, and should ensure that development in this corridor achieves more than simply the minimisation of harm to rights of way, and secures actual enhancement.</p>                               | <p>Any potential negative effects of mineral development within this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 17 Access and Recreation</i><b>Error! Reference source not found..</b></p>  |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0   | <p>In the short term, effects on health and amenity may generally be expected to be negative, although the MLP will mitigate these through other policies.<br/>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).</p>  | <p>Any negative effects on health arising from mineral development in this corridor will be mitigated through other policies in the MLP, including <i>Policy MLP 16 Health and Quality of Life</i>.</p>  |

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|   |   | There is no discernible cohesion between this corridor and GI-related health indicators in a high-level map <sup>38</sup> . No clear effects on this SA objective can be established.  |  |
| <b>10: Waste</b><br>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.  | The waste impacts of mineral development in the corridors will be mitigated through other policies in the MLP, including <i>Policy MLP 20 Agriculture and Soils</i> .  |
| <b>11: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.  | ? | The Worcester and Birmingham canal, and part of the Droitwich canal, pass 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.<br>The corridor is very well served by the motorway network, with access to the M5 and M42.<br>The corridor is not so large that there are areas with particularly poor access to the strategic transport network, helping to minimise transport emissions. Without further information, it is not possible to predict the likely transport effects arising from this corridor.               | The effects of mineral development in the corridor will be mitigated through other policies in the MLP including <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i> . |
| <b>12: Growth with prosperity for all</b><br>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and | + | 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 (although there are no allocated sites or preferred areas within this corridor). The corridor relates well to potential end uses in Bromsgrove, Droitwich, and surrounding | No mitigation has been identified.   |

<sup>38</sup> 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

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| <p>rural.</p>   |                                      | <p>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.</p>  |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</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 (although there are no allocated sites or preferred areas within this corridor). 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.</p> | <p>No mitigation has been identified.</p> |
| <p><b>I4: Participation by all</b><br/>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> | <p style="text-align: center;">0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation has been identified.</p> |

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| <p><b>15: Technology, innovation and inward investment</b><br/>                 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 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>No mitigation has been identified.</p> |
| <p><b>16: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p>   | 0 | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation has been identified.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p>   | 0 | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation has been identified.</p> |

## (c) Appraisal of Chapter 6: Steady and adequate supply of mineral resources

**Appraisal of policies: Policy MLP 7 Contribution of Substitute, Secondary and Recycled Materials and Mineral Waste to Overall Minerals Supply**

Note: throughout this matrix the term "secondary minerals" is taken to mean substitute, secondary and recycled materials and mineral waste.

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
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| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact. | +/?                          | This policy has no particular spatial dimension, nor any direction on layout, scale or appearance. As such, it is difficult to predict any effects on this SA objective. 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 incursions into the landscape but, conversely, could also require extensive plant and material storage. 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, but it is not possible to make such judgements without more information. | Other policies in the MLP, especially <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 19 Landscape</i> should help to ensure that any effects of this policy on landscape and visual impact are taken into account.                                  |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.      | +/?                          | 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 is reduced. This could be beneficial to biodiversity and geodiversity, as they may remain undisturbed. But this will depend upon the exact nature and location of the plant. 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  | Other policies in the MLP, especially <i>Policy MLP 18 Biodiversity</i> <b>Error! Reference source not found.</b> and <i>Policy MLP 21 Geodiversity</i> should help to ensure that any effects of this policy on biodiversity and geodiversity are taken into account. |

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|  |     | offer fewer longer-term benefits.  |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 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. As stated in paragraph 6.9 of the reasoned justification, "<i>Reclaimed materials have the potential to play an important role in the maintenance of historic assets and conserving and enhancing the local vernacular, reducing the need for the supply of primary building stone or locally specific brick types</i>". The use of all types of secondary minerals can also play an important role in delivering resource-efficient development. The development required to deliver these secondary minerals could affect the historic environment, but safeguards elsewhere in the MLP should help to reduce any negative effects.</p>  | <p>Other policies in the MLP, especially <i>Policy MLP 23 Historic Environment</i> <b>Error! Reference source not found.</b> should help to ensure that any effects of this policy on the historic environment are taken into account.</p> |
| <p><b>4: Material assets</b><br/>                 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 only allows that (in relation to this sort of development) "<i>mineral extraction</i>" and "<i>engineering operations</i>" are not inappropriate in Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in Green Belt. The type of development associated with secondary minerals may well require buildings that would be inappropriate development.</p> | <p>As stated elsewhere in this SA, consideration could be given to including a policy on green belt.</p>   |

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| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | ? | <p>Without knowing more details of what secondary minerals development will occur and where, it is impossible to predict the likely effects on water and air quality. Whilst increased provision of secondary minerals may reduce the need for primary extraction and processing, and thereby minimise the risks associated with it, the development required to deliver this could bring its 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.</p>            | <p>Other parts of the MLP, in particular <i>Policy MLP 16 Health and Quality of Life</i><b>Error! Reference source not found.</b> and <i>Policy MLP 22 Water Environment</i>, should help to ensure that air and water quality are protected and enhanced.</p>                       |
| <p><b>6: Climate Change and energy</b><br/>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 minerals 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 involve 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>Other parts of the MLP, in particular <i>Policy MLP 15 Sustainable Design Principles</i>, should help to ensure that climate change is mitigated and energy efficiency is promoted.</p>   |
| <p><b>7: Flooding</b><br/>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>The effects of this policy on flooding are unclear at this stage, as the location and design of any development is unknown. Primary extraction, with its associated changes to landform and levels, may offer more scope to provide for enhanced flood storage as part of GI restoration, whereas secondary minerals facilities may not offer such scope. Under the sequential test, minerals extraction is often 'water-compatible development', but secondary minerals facilities are unlikely to be considered as such.</p>  | <p>Other parts of the MLP, in particular <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 22 Water Environment</i><b>Error! Reference source not found.</b>, should help to ensure that flood risk is not increased, either within the site(s) or elsewhere.</p> |



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| flooding in all other areas.   |    |  |  |
| <b>8: Access to Services</b><br>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.  | No mitigation is considered necessary. Other parts of the MLP address these issues.  |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the population and reduce inequalities in health.   | ?  | This policy could potentially lead to an increase in transport movements and therefore 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). The scale and duration of these effects, however, cannot be known at this stage.   | Other parts of the MLP, in particular <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 16 Health and Quality of Life</i> , should help to ensure that health and amenity are protected and improved. |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   | ++ | This SA objective is strongly supported by this policy, which seeks to ensure that waste materials are reused. Mineral waste is specifically mentioned in the policy, which is welcomed. The reasoning behind the requirement for proposals to demonstrate a specified end-use is not clear, and may require further explanation; if this is a not a reasonable requirement (the avoidance of landfill, for example, is already prevented by policy within the Waste Core Strategy), it could needlessly jeopardise valuable secondary minerals provision. | The requirement for proposals to demonstrate a specified end-use should be clarified.  |

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| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | ? | <p>The transport implications of this policy are unclear at this stage. Secondary minerals provision could see a reduction in the need for primary minerals extraction and processing and its associated transport. However, secondary minerals facilities may require greater numbers of vehicle movements, as material is moved both to sites for processing, and then from sites once processed.</p>         | <p>Other parts of the MLP, in particular <i>Policy MLP 24 Transport To and From Site</i> and <i>Policy MLP 25 Transport Within Mineral Sites</i>, should help to ensure that the need to travel is reduced.</p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | ? | <p>Whilst this policy could support valuable economic activity, it could also prevent the economic activity associated with primary extraction, and so the overall effects are unclear.</p>   | <p>No mitigation is considered necessary. Other parts of the MLP address these issues.</p>  |
| <p><b>I3: Provision of housing</b><br/>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>No significant effects are predicted to arise on this SA objective as a result of the policy, although the provision of local building stone, in particular, 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>No mitigation is considered necessary. Other parts of the MLP address these issues.</p>  |
| <p><b>I4: Participation by all</b><br/>Provide opportunities for communities to participate in and contribute to decisions that affect</p>   | 0 | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p>   |

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| <p>their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>  |          |  |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> | <p>0</p> | <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 rating against this SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and antisocial behaviour.</p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |

### Appraisal of policies: Policy MLP 8 Steady and Adequate Supply of Sand and Gravel

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
|--|------------------------------|--|--|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.   | 0                            | 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. Without saying how or where the development should take place, no effects on landscape can be predicted. A lower level of landbank could potentially offer greater safeguards to landscape, as less minerals activity would be necessary. Conversely, with a restoration-led plan that seeks gains in green infrastructure, including landscape, a higher landbank could lead to increased gains in the longer term. But as the landbank is guided by national policy, these arguments are not valid, and no effects have been recorded against this SA objective. | No mitigation is considered necessary, as this policy does not directly relate to the landscape. Other parts of the MLP will address these issues.                                   |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.  | 0                            | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on biodiversity and geodiversity.   | No mitigation is considered necessary, as this policy does not directly relate to biodiversity and geodiversity. Other parts of the MLP will address these issues.                   |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local | +/?                          | The provision of sufficient sand and gravel will be important in carrying out works to preserve and enhance the historic environment. Whilst such activity could potentially compromise assets under this SA objective, the policy itself does not specify how or where development should take place, and so such negative effects cannot be predicted.   | No mitigation is considered necessary, as this policy does not directly relate to cultural heritage, architecture and archaeology. Other parts of the MLP will address these issues. |

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| <p>character and distinctiveness.</p>   |                                      |   |   |
| <p><b>4: Material assets</b><br/>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 style="text-align: center;">+</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.</p>                 | <p>No mitigation is considered necessary. Other parts of the MLP will address these issues.</p>   |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p style="text-align: center;">0</p> | <p>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on water and air quality.</p>   | <p>No mitigation is considered necessary, as this policy does not directly relate to water and air quality. Other parts of the MLP will address these issues.</p>     |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-</p>   | <p style="text-align: center;">+</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 sand and gravel sites. The reasoned justification states that one of the ways in which this enhancement of productive capacity could arise is through "<i>more efficient plant, machinery and working practices at existing sites</i>". This would be likely to have climate change and energy benefits, and is thereby a minor positive effect on this SA objective.</p> | <p>No mitigation is considered necessary, as this policy does not directly relate to climate change and energy. Other parts of the MLP will address these issues.</p> |

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| carbon sources.   |   |   |   |
| <p><b>7: Flooding</b><br/>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 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on flooding.           | No mitigation is considered necessary, as this policy does not directly relate to flooding. Other parts of the MLP will address these issues.           |
| <p><b>8: Access to Services</b><br/>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 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on access to services. | No mitigation is considered necessary, as this policy does not directly relate to access to services. Other parts of the MLP will address these issues. |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on health and amenity. | No mitigation is considered necessary, as this policy does not directly relate to health and amenity. Other parts of the MLP will address these issues. |

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| <p><b>10: Waste</b><br/>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, 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. 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>No mitigation is considered necessary, as this policy does not directly relate to waste. Other parts of the MLP, along with the Waste Core Strategy, will address these issues.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | +/? | <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.</p>   | <p>No mitigation is considered necessary, as this policy does not directly relate to traffic and transport. Other parts of the MLP will address these issues.</p>                      |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | +   | <p>The policy encourages the provision of adequate minerals to enable Worcestershire's growth. The landbank targets are based on historic trends and if these levels were maxima, this could potentially act as a constraint if economic and infrastructure development were to be accelerated. By ensuring these targets are minima - and that productive capacity should be enhanced (as well as maintained) – the policy should be responsive enough to allow for the increased delivery of sand and gravel if required.</p>  | <p>No mitigation is considered necessary.</p>  |
| <p><b>13: Provision of housing</b><br/>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 minerals to enable the provision of housing. The landbank targets are based on historic trends, rather than projected construction requirements (housing targets in local plans, etc.) and if the landbank levels were maxima, this could potentially act as a constraint on housing development. By ensuring these targets are minima - and that productive capacity should be enhanced (as well as maintained) – the policy should be responsive enough to allow for the increased delivery of sand and gravel if required. 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 help avoid the need</p> | <p>No mitigation is considered necessary.</p>  |

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|   |   | for additional sites, and the potential negative effects on clean, safe and pleasant local environments that these could bring. The nature of such effects, however, cannot be known at this stage.  |  |
| <p><b>I4: Participation by all</b><br/>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.  | No mitigation is considered necessary. |
| <p><b>I5: Technology, innovation and inward investment</b><br/>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. | No mitigation is considered necessary. |



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| <p><b>I6: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p> | 0 | No effects on this SA objective have been identified. | No mitigation is considered necessary. |
| <p><b>I7: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p>   | 0 | No effects on this SA objective have been identified. | No mitigation is considered necessary. |

### Appraisal of policies: Policy MLP 9 Steady and Adequate Supply of Crushed Rock

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
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| <p><b>1: Landscape</b><br/>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 current (and likely future) landbank target is nil. As such, there is little impetus to develop crushed rock within the county. A lack of crushed rock development could be beneficial to this SA objective in terms of reducing likely risk to designated landscapes. Chapter 2 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 and. This policy is unlikely to lead to widespread development proposals coming forward within these areas, thereby supporting this SA objective by safeguarding these landscapes. When development does come forward, however, the location of resources means that it may well be within these designated landscapes, so that the risk will continue.</p> <p>As the plan is restoration-led, a lack of crushed rock development could mean a corresponding lack of opportunities to secure green infrastructure enhancements in the longer term, which could include landscape enhancement. The potential for enhancement, however, does not outweigh the avoidance of risk, especially given the location of much of the crushed rock resource. AONBs have long enjoyed a high degree of landscape protection and, in general terms, it may be inferred that landscapes here require less improvement than landscapes not enjoying such protection.</p> | <p>Other parts of the MLP – in particular <i>Policy MLP 19 Landscape</i> - will address these issues.</p>  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance</p>  | 0                            | <p>No effects on this SA objective have been identified. There is likely to be limited development, given historic trends and a nil landbank target, which could help to conserve biodiversity and geodiversity through avoiding potential risks from development. Opportunities to secure GI</p>   | <p>Other parts of the MLP – in particular <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i> - will address these issues.</p> |

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| <p>Worcestershire's biodiversity and geodiversity.</p>   |            | <p>enhancement will, similarly, be limited.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>   | <p>-/?</p> | <p>A landbank target of zero could potentially compromise the ability to ensure repairs to Worcestershire's cultural heritage, architecture and archaeology, although any shortfall in crushed rock is likely to be made up by imports from outside the county. Relying on imports, however, could potentially lead to increased costs and delays, which could hamper conservation efforts.</p> | <p>The Mineral Planning Authority needs to remain active in cross-boundary discussions with adjoining and other authorities - and with industry - to ensure that Worcestershire's constraints on crushed rock extraction do not put built conservation interests at risk.</p> |
| <p><b>4: Material assets</b><br/>                 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>0</p>   | <p>No effects on this SA objective have been identified. Having a zero target as a landbank will do little to stimulate development, and so mineral reserves may well be safeguarded, but this is not considered a sufficient effect to register against this SA objective.</p>   | <p>No mitigation is considered necessary.</p>   |

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| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | ?   | <p>A landbank target of zero may mean that development is less likely to take place, with consequent risks to water and air quality thereby being reduced. But the policy does seek to facilitate crushed rock development, and it is unclear what water and air quality effects may arise at this stage.</p>   | <p>Other parts of the MLP – in particular <b>Error! Reference source not found.</b> <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 22 Water Environment</i> - will address these issues.</p>  |
| <p><b>6: Climate Change and energy</b><br/>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>Although the policy does seek to facilitate crushed rock development, a landbank target of zero may mean that proposals are less likely to come forward. This could mean that the shortfall of crushed rock - which will be needed within Worcestershire over the plan period – is likely to come from outside the county. Where this is sourced outside Worcestershire but close to the county boundary, and used within Worcestershire but also close to the county boundary, this could be more sustainable than developing within Worcestershire. But it is reasonable to assume that a better scenario in terms of climate change and energy would be to source and use crushed rock within the county; this is likely to keep transport emissions to a minimum, and reduce the energy needed to move bulky materials longer distances.</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 crushed rock 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>The Mineral Planning Authority needs to remain active in cross-boundary discussions with adjoining and other authorities - and with industry - to ensure that Worcestershire's constraints on crushed rock extraction do not lead to the long-distance transport of crushed rock from outside the county, with resultant energy use and carbon emissions.</p> |
| <p><b>7: Flooding</b><br/>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> | 0   | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p>  |

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| areas.  |   |   |   |
| <p><b>8: Access to Services</b><br/>                 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 on this SA objective have been identified.   | No mitigation is considered necessary.  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | 0 | No effects on this SA objective have been identified.   | No mitigation is considered necessary.  |
| <p><b>10: Waste</b><br/>                 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 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. | No mitigation is considered necessary, as this policy does not directly relate to waste. Other parts of the MLP, as well as the Waste Core Strategy, will address these issues. |

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| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | -   | <p>The zero landbank target will do little to encourage development of crushed rock. Although this is unavoidable, as policy dictates that targets are based on rolling historic levels, it does mean that crushed rock is likely to be transported into the county. This could potentially conflict with this SA objective. The precise degree to which transport movements are increased will depend on where the crushed rock is sourced outside the county, and where it is used within the county.</p>  | <p>The Mineral Planning Authority needs to remain active in cross-boundary discussions with adjoining and other authorities - and with industry - to ensure that Worcestershire's constraints on crushed rock extraction do not lead to the long-distance transport of crushed rock from outside the county.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | -/? | <p>The landbank target of zero will not encourage crushed rock provision within the county, although the policy does seek to facilitate any schemes that may come forward. The lack of a landbank target 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>The Mineral Planning Authority needs to remain active in cross-boundary discussions with adjoining and other authorities - and with industry - to ensure that Worcestershire's shortfall in crushed rock can be provided for through other sources.</p>   |
| <p><b>13: Provision of housing</b><br/>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 landbank target of zero will not encourage crushed rock provision within the county, although the policy does seek to facilitate any schemes that may come forward. The lack of a landbank target 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 housing could be compromised if timely, affordable supplies cannot be secured from elsewhere.</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 help avoid the need for additional sites, and the potential negative effects on clean, safe and pleasant local environments that these could bring. The nature of such effects, however, cannot be known at this stage.</p> | <p>The Mineral Planning Authority needs to remain active in cross-boundary discussions with adjoining and other authorities - and with industry - to ensure that Worcestershire's shortfall in crushed rock can be provided for through other sources.</p>   |
| <p><b>14: Participation by all</b><br/>Provide</p>   | 0   | <p>No effects on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p>  |

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| <p>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>                                    |          |   |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> | <p>?</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.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b></p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |

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| Reduce crime, fear of crime and antisocial behaviour. |  |  |  |
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### Appraisal of policies: Policy MLP 10 Steady and Adequate Supply of Brick Clay and Clay Products

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation  |
|---|------------------------------|---|---|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.  | 0                            | The policy seeks to enable and encourage the steady and adequate supply of brick clay and clay products. Without saying how or where the development should take place, or providing a target level, no effects on landscape can be predicted.  | No mitigation is considered necessary, as this policy does not directly relate to the landscape. Other parts of the MLP, including <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 19 Landscape</i> , will address these issues.      |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.   | 0                            | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on biodiversity and geodiversity.  | No mitigation is considered necessary, as this policy does not directly relate to biodiversity and geodiversity. Other parts of the MLP, including <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i> , will address these issues. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness. | +                            | The provision of sufficient bricks clay and clay products will be important in carrying out works to preserve and enhance the historic environment. Whilst such activity could potentially compromise assets under this SA objective, the policy itself does not specify how or where development should take place, and so such negative effects cannot be predicted. The reasoned justification states that permitted reserves exceed 25 years' capacity, so additional large-scale development – with potential effects on the historic environment - may be considered unlikely, although cannot be ruled out entirely. | No mitigation is considered necessary, as this policy does not directly relate to cultural heritage, architecture and archaeology. Other parts of the MLP, including <i>Policy MLP 23 Historic Environment</i> , will address these issues.             |

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| <p><b>4: Material assets</b><br/>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>Part (b) 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.</p> | <p>No mitigation is considered necessary.</p>   |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>0</p> | <p>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on water and air quality. The reasoned justification states that permitted reserves exceed 25 years' capacity, so additional large-scale development – with potential effects on water and air quality - may be considered unlikely, although cannot be ruled out entirely.</p>  | <p>No mitigation is considered necessary, as this policy does not directly relate to water and air quality. Other parts of the MLP will address these issues.</p>     |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-</p>   | <p>+</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 clay sites. The reasoned justification states that one of the ways in which this enhancement of productive capacity could arise is through "<i>more efficient plant, machinery and working practices at existing sites</i>". This would be likely to have climate change and energy benefits, and is thereby a minor positive effect on this SA objective.</p> | <p>No mitigation is considered necessary, as this policy does not directly relate to climate change and energy. Other parts of the MLP will address these issues.</p> |

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| carbon sources.   |   |   |   |
| <p><b>7: Flooding</b><br/>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 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on flooding.           | No mitigation is considered necessary, as this policy does not directly relate to flooding. Other parts of the MLP will address these issues.           |
| <p><b>8: Access to Services</b><br/>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 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on access to services. | No mitigation is considered necessary, as this policy does not directly relate to access to services. Other parts of the MLP will address these issues. |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on health and amenity. | No mitigation is considered necessary, as this policy does not directly relate to health and amenity. Other parts of the MLP will address these issues. |

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| <p><b>10: Waste</b><br/>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, which seeks to enable productive capacity for brick clay and clay products 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>No mitigation is considered necessary, as this policy does not directly relate to waste. Other parts of the MLP will address these issues.</p>                 |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | +/? | <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.</p>   | <p>No mitigation is considered necessary, as this policy does not directly relate to traffic and transport. Other parts of the MLP will address these issues.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>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 brick clay and clay products, it does not specify what level is required. The reasoned justification states only that sales are running at 130,000 tonnes per year and that this is "adequate to supply levels of demand in Worcestershire". It is unclear whether this supply takes into account planned growth in employment land and infrastructure over the plan period, although permitted reserves of 75 years should mean that levels are more than adequate, and so the policy is sufficient to support this SA objective. This may, however, depend on the continued operation of just two large sites. The introductory text in chapter 6 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 bound up in 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 therefore be particularly vulnerable to commercial decisions or natural events at any individual site". It would be inappropriate for the policy to take a stronger stance on encouraging further sites when such permitted supply already exists, and</p> | <p>Consideration should be given to whether or not too much reliance is made on the county's limited number of very large sites.</p>                              |

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|  |   | the policy is sufficient to enable additional operators to come forward.   |   |
| <p><b>I3: Provision of housing</b><br/>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 brick clay and clay products, it does not specify what level is required. The reasoned justification states only that sales are running at 130,000 tonnes per year and that this is "adequate to supply levels of demand in Worcestershire". It is unclear whether this supply takes into account planned growth in housing over the plan period, although permitted reserves of 75 years should mean that levels are more than adequate, and so the policy is sufficient to support this SA objective. This may, however, depend on the continued operation of just two large sites. The introductory text in chapter 6 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 bound up in 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 therefore be particularly vulnerable to commercial decisions or natural events at any individual site". It would be inappropriate for the policy to take a stronger stance on encouraging further sites when such permitted supply already exists, and the policy is sufficient to enable additional operators to come forward.</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 help avoid the need for additional sites, and the potential negative effects on clean, safe and pleasant local environments that these could bring. The nature of such effects, however, cannot be known at this stage.</p> | Consideration should be given to whether or not too much reliance is made on the county's limited number of very large sites. |
| <p><b>I4: Participation by all</b><br/>Provide opportunities for communities to</p>  | 0 | No effects on this SA objective have been identified.  | No mitigation is considered necessary.  |

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| <p>participate in and contribute to decisions that affect their neighbourhood and quality of life, encouraging pride and social responsibility in the local community.</p>   |          |   |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> | <p>?</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.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and</p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |

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| antisocial behaviour. |  |  |  |
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**Appraisal of policies: Policy MLP 11 Steady and Adequate Supply of Silica Sand**

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects  | Potential mitigation  |
|---|------------------------------|--|---|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.  | 0                            | The policy seeks to enable and encourage the steady and adequate supply of silica sand for industrial uses. Without saying how or where the development should take place, or providing a target level, no effects on landscape can be predicted. The text and maps of potential silica sand in chapter 2 of the MLP show that it occurs in the Wildmoor Foundation, and development within this area is unlikely to affect either of Worcestershire's AONBs.  | No mitigation is considered necessary, as this policy does not directly relate to the landscape. Other parts of the MLP, including <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 19 Landscape</i> , will address these issues.      |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.   | 0                            | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on biodiversity and geodiversity.   | No mitigation is considered necessary, as this policy does not directly relate to biodiversity and geodiversity. Other parts of the MLP, including <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i> , will address these issues. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness. | 0                            | 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, then for the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on cultural heritage, architecture and archaeology. | No mitigation is considered necessary, as this policy does not directly relate to cultural heritage, architecture and archaeology. Other parts of the MLP, including <i>Policy MLP 23 Historic Environment</i> , will address these issues.             |



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| <p><b>4: Material assets</b><br/>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.</p>    | <p>No mitigation is considered necessary.</p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | 0 | <p>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on water and air quality. The reasoned justification states that permitted reserves are "<i>likely to be sufficient for the life of the plan</i>", so additional large-scale development – with potential effects on water and air quality - may be considered unlikely, although cannot be ruled out entirely.</p>   | <p>No mitigation is considered necessary, as this policy does not directly relate to water and air quality. Other parts of the MLP, including <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 22 Water Environment</i>, will address these issues.</p> |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-</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. The reasoned justification states that one of the ways in which this enhancement of productive capacity could arise is through "<i>more efficient plant, machinery and working practices at existing sites</i>". This would be likely to have climate change and energy benefits, and is thereby a minor positive effect on this SA objective.</p> | <p>No mitigation is considered necessary, as this policy does not directly relate to climate change and energy. Other parts of the MLP will address these issues.</p>  |

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| carbon sources.   |   |   |   |
| <p><b>7: Flooding</b><br/>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 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on flooding.           | No mitigation is considered necessary, as this policy does not directly relate to flooding. Other parts of the MLP will address these issues.           |
| <p><b>8: Access to Services</b><br/>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 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on access to services. | No mitigation is considered necessary, as this policy does not directly relate to access to services. Other parts of the MLP will address these issues. |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the</p>  | 0 | For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on health and amenity. | No mitigation is considered necessary, as this policy does not directly relate to health and amenity. Other parts of the MLP will address these issues. |

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| <p>population and reduce inequalities in health.</p>   |     |   |   |
| <p><b>10: Waste</b><br/>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, which seeks to enable productive capacity for silica sand 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>No mitigation is considered necessary, as this policy does not directly relate to waste. Other parts of the MLP will address these issues.</p>                 |
| <p><b>11: Traffic and transport</b><br/>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>No mitigation is considered necessary, as this policy does not directly relate to traffic and transport. Other parts of the MLP will address these issues.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>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 6 refers to the importance of ensuring that <i>"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)"</i> and that <i>"large landbanks bound up in very few sites do not stifle competition"</i>. 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 <i>"The overall security of Worcestershire's productive capacity could therefore be particularly vulnerable to commercial decisions or natural events at any individual site"</i>. It would be inappropriate for the policy to take a stronger stance on encouraging further sites when such permitted supply already exists, and the policy is sufficient to enable additional operators to come forward. The contribution that silica sand can play towards Worcestershire's economy, infrastructure and skills base is unclear, as it is not known what current and future industrial processes may require the resource, but</p> | <p>No mitigation is considered necessary.</p>   |

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|   |   | making provision for it should support this SA objective.   |  |
| <p><b>I3: Provision of housing</b><br/>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 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. | No mitigation is considered necessary. |
| <p><b>I4: Participation by all</b><br/>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.   | No mitigation is considered necessary. |
| <p><b>I5: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high</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.                    | No mitigation is considered necessary. |

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| value and low impact, especially resource efficient technologies and environmental technology initiatives.   |   |   |  |
| <b>16: Population (skills and education)</b><br>Raise the skills levels and qualifications of the workforce. | 0 | No effects on this SA objective have been identified. | No mitigation is considered necessary. |
| <b>17: Population (crime &amp; fear of crime)</b><br>Reduce crime, fear of crime and antisocial behaviour.   | 0 | No effects on this SA objective have been identified. | No mitigation is considered necessary. |

**Appraisal of policies: Policy MLP 12 Adequate and Diverse Supply of Building Stone**

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation  |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>  | 0                            | <p>The policy seeks to enable and encourage an adequate and diverse supply of building stone. Without saying how or where the development should take place, or providing a target level, no effects on landscape can be predicted.</p>   | <p>No mitigation is considered necessary, as this policy does not directly relate to the landscape. Other parts of the MLP will address these issues.</p>                 |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>   | 0                            | <p>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on biodiversity and geodiversity.</p>   | <p>No mitigation is considered necessary, as this policy does not directly relate to biodiversity and geodiversity. Other parts of the MLP will address these issues.</p> |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>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. Whilst such activity could potentially compromise assets under this SA objective, the policy itself does not specify how or where development should take place, and so such negative effects cannot be predicted. The policy does not strongly encourage an increase in provision from the current zero landbank, and so cannot be accorded a significant positive effect.</p> | <p>No mitigation is considered necessary.</p>   |

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| <p><b>4: Material assets</b><br/>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 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 space. The importance of reusing building stone from the demolition of existing structures is recognised in the reasoned justification and could be seen as a form of "<i>maximising the reuse of vacant buildings</i>", although this is not the intended meaning of the SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | 0 | <p>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on water and air quality.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>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 "<i>more efficient plant, machinery and working practices over the life of any sites which are developed</i>". This would be likely to have climate change and energy benefits, and is thereby a minor positive effect on this SA objective.</p>   | <p>No mitigation is considered necessary.</p> |

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| <p><b>7: Flooding</b><br/>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>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on flooding.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>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>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on access to services.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0 | <p>For the same reasons as are outlined under the Landscape SA objective above, no effects have been identified on health and amenity.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1)</p>   | ? | <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</p> | <p>No mitigation is considered necessary.</p> |



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| reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   |     | 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.  |  |
| <b>I1: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | +/? | 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.   | No mitigation is considered necessary. |
| <b>I2: Growth with prosperity for all</b><br>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 is a very slight beneficial effect, it is not considered sufficient enough to register positively against this SA objective. | No mitigation is considered necessary. |
| <b>I3: Provision of housing</b><br>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 delivery of housing per se, it can be very important in delivering " <i>decent housing... of the right quality...in ...pleasant local environments</i> ". This will be especially important in sensitive locations where there is a strong history of building stone. As such, the policy supports this SA objective.  | No mitigation is considered necessary. |
| <b>I4: Participation by all</b><br>Provide opportunities for   | 0   | No effects on this SA objective have been identified.  | No mitigation is considered necessary. |

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| <p>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>  |          |  |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> | <p>?</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. The reasoned justification refers to the possibility of "<i>more efficient plant, machinery and working practices over the life of any sites which are developed</i>". 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.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear</p>  | <p>0</p> | <p>No effects on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |

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| of crime and antisocial behaviour. |  |  |  |
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**Appraisal of policies: Policy MLP 13 Supply of Other Locally and Nationally Important Industrial Minerals**

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation                   |
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| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.  | ?                            | 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. | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.   | ?                            | 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. | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness. | ?                            | 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. | No mitigation is considered necessary. |

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| <p><b>4: Material assets</b><br/>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>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>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>?</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>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>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 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>No mitigation is considered necessary.</p> |

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| <p><b>7: Flooding</b><br/>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. 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>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>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 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>No mitigation is considered necessary.</p> |
| <p><b>9: Health and amenity</b><br/>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. 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>No mitigation is considered necessary.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1)</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</p>   | <p>No mitigation is considered necessary.</p> |

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| reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   |   | effects on this SA objective cannot be predicted.  |  |
| <b>I1: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | + | 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. 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. | No mitigation is considered necessary. |
| <b>I2: Growth with prosperity for all</b><br>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.       | + | The policy plans of the unknown, and this can be seen as a prudent measure to ensure that future industrial opportunities are provided for. As such, the policy will support this SA objective.  | No mitigation is considered necessary. |
| <b>I3: Provision of housing</b><br>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 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.  | No mitigation is considered necessary. |

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| <p><b>14: Participation by all</b><br/>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. | No mitigation is considered necessary. |
| <p><b>15: Technology, innovation and inward investment</b><br/>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. | No mitigation is considered necessary. |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>  | 0 |   | No mitigation is considered necessary. |



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| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and antisocial behaviour.</p> | <p>0</p> | <p>No effects on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
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**Appraisal of policies: Policy MLP 14 Supply of Energy Minerals**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation                   |
|--|------------------------------|---|--|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact. | +                            | The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could compromise landscape character and introduce negative visual impact is less likely to occur, and so the policy supports this SA objective. Conversely, as the plan is restoration-led, a lack of energy minerals development could mean a corresponding lack of opportunities to secure green infrastructure enhancements in the longer term, which could include landscape enhancement. The potential for enhancement, however, does not outweigh the avoidance of risk. The likely location of coal resources, as shown by hazard areas in chapter 2 of the MLP, shows that they are some distance from the county's AONBs, although the location of any potential oil and gas development is not known (nor expected) at this stage. | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.      | +                            | The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could compromise biodiversity and geodiversity is less likely to occur, and so the policy supports this SA objective. Conversely, as the plan is restoration-led, a lack of energy minerals development could mean a corresponding lack of opportunities to secure green infrastructure enhancements in the longer term, which could include gains in quality/extent/interpretation of biodiversity and geodiversity. The potential for enhancement, however, does not outweigh the avoidance of risk.  | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and       | +                            | The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could compromise cultural heritage, architecture and archaeology is less likely to occur, and so the policy supports this SA objective. Conversely, as the plan is restoration-led, a lack of energy minerals development could mean a corresponding lack of opportunities to secure green infrastructure enhancements in the longer term, which could include enhancement of   | No mitigation is considered necessary. |

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| <p>deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>   |           | <p>the historic environment. The potential for enhancement, however, does not outweigh the avoidance of risk.</p>  |   |
| <p><b>4: Material assets</b><br/>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>The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could compromise the best and most versatile agricultural land and/or the Green Belt is less likely to occur, and so the policy supports this SA objective. Conversely, as the plan is restoration-led, a lack of energy minerals development could mean a corresponding lack of opportunities to secure green infrastructure enhancements in the longer term. The potential for enhancement, however, does not outweigh the avoidance of risk.</p>         | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>+</p>  | <p>The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could compromise water and air quality is less likely to occur, and so the policy supports this SA objective. Conversely, as the plan is restoration-led, a lack of energy minerals development could mean a corresponding lack of opportunities to secure green infrastructure enhancements in the longer term, which could indirectly support air and water quality. The potential for enhancement, however, does not outweigh the avoidance of risk.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and</b></p>   | <p>++</p> | <p>The negative stance of the policy will mean that development of energy minerals will be restricted. Coal, oil, and gas are all fossil fuels, the</p>  | <p>No mitigation is considered necessary.</p> |

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| <p><b>energy</b><br/>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>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 use is less likely to occur, and so the policy supports this SA objective. Gas, however, unlike coal and oil, is often seen as a 'low-carbon' fuel – especially when used in district energy networks – and so it could be argued that increased provision of gas would help to deliver low-carbon energy and thereby reduce the causes of climate change. This would be the case were gas to be used instead of a more polluting fuel, such as coal. While there are known coal resources in the county, however (albeit none that are economically viable), the reasoned justification notes that "<i>There are no known oil or gas deposits in Worcestershire</i>". This means that, if energy mineral development is to come forward, it is more likely to be coal, and therefore more likely to compromise the aims of this SA objective. The policy therefore has a significant positive effect in reducing this risk.</p> |   |
| <p><b>7: Flooding</b><br/>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 negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could occur in high-risk flood-prone areas and/or which contributes to flooding elsewhere is less likely to occur, and so the policy supports this SA objective. While 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 GI restoration, the potential for enhancement does not outweigh the avoidance of risk.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity,</p>   | 0 | <p>The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could potentially compromise access to services is less likely to occur. This 'benefit' however, is not considered to be sufficiently strong to justify a positive effect.</p>  | <p>No mitigation is considered necessary.</p> |

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| disability, socio-economic status or educational attainment.  |     |  |  |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the population and reduce inequalities in health.  | +   | The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could potentially compromise people's health and amenity though the effects of the development itself (noise, air quality, etc.) as well as the effects from the end use of fossil fuels (pollution, etc.) is less likely to occur. The policy therefore supports this SA objective.   | No mitigation is considered necessary. |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.                  | 0   | The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could potentially generate waste is less likely to occur. This 'benefit' however, is not considered to be sufficiently strong to justify a positive effect.  | No mitigation is considered necessary. |
| <b>11: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.  | 0   | No effects on this SA objective have been identified.  | No mitigation is considered necessary. |
| <b>12: Growth with prosperity for all</b><br>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and | -/? | 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 significant local employment. Increasing carbon costs and corporate social responsibility may make fossil fuel use less attractive to business in the longer term, but a | No mitigation is considered necessary. |

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| rural.  |   | restriction on, say, shale gas – which may lead to lower prices (although estimates vary) – could hamper economic growth.   |  |
| <b>I3: Provision of housing</b><br>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.  | 0 | The negative stance of the policy will mean that development of energy minerals will be restricted. As such, development that could potentially compromise clean and pleasant local environments is less likely to occur. This 'benefit' however, is not considered to be sufficiently strong to justify a positive effect.   | No mitigation is considered necessary. |
| <b>I4: Participation by all</b><br>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.   | No mitigation is considered necessary. |
| <b>I5: Technology, innovation and inward investment</b><br>Promote and support the development of new technologies, of high   | + | The negative stance of the policy will mean that development of energy minerals will be restricted. As such, opportunities to promote and support resource-efficient technologies could be compromised. 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 Worcestershire, with | No mitigation is considered necessary. |

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| <p>value and low impact, especially resource efficient technologies and environmental technology initiatives.</p>    |          | <p>the reasoned justification stating that <i>"There are no known oil or gas deposits in Worcestershire"</i>. As such, this benefit has been discounted. Restriction on fossil fuel extraction would, however, support renewable energy, which fits well with this SA objective's promotion and support of <i>"resource efficient technologies and environmental technology initiatives"</i>.</p> |   |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p> | <p>0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and antisocial behaviour.</p>   | <p>0</p> | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |

**(d) Appraisal of Chapter 7: Development management**

**Appraisal of policies: Policy MLP 15 Sustainable Design Principles**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation                          |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | +                            | <p>The delivery of integrated and multifunctional green infrastructure will support the safeguarding and strengthening of landscape character, which is a fundamental part of green infrastructure. Overall, however, the focus is more on safeguarding than strengthening. The degree to which landscape specifically is supported may vary on a site-by-site basis depending on the particular constraints and opportunities, as green infrastructure seeks to balance a range of usually complementary interests.</p> <p>The requirement to take account of local context should help to minimise negative visual impact. Delivering restoration and after-use at the earliest opportunity will help to reduce the amount of time that the landscape and visual impact will be compromised by operations.</p> <p>The potential for multiple sites to give rise to cumulative impacts is recognised, and this could be particularly important if a combination of sites would exceed the landscape capacity.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | +                            | <p>The delivery of integrated and multifunctional green infrastructure will support the conservation and enhancement of biodiversity and geodiversity, both of which are part of green infrastructure. Overall, however, the focus is more on safeguarding than strengthening. The degree to which biodiversity and geodiversity are specifically supported may vary on a site-by-site basis depending on the particular constraints and opportunities, as green infrastructure seeks to balance a range of usually complementary interests.</p>   | <p>No mitigation is considered necessary.</p> |



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|   |            | <p>The potential for multiple sites to give rise to cumulative impacts is recognised, and this could help to protect biodiversity and geodiversity assets.</p> <p>The requirement to be resilient to climate change will support the consideration of how networks may be needed to enable species to migrate as a result of climate change.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>                              | <p>+</p>   | <p>The policy explicitly requires proposals to be resource efficient and to take account of local context. The delivery of integrated and multifunctional green infrastructure will support the preservation and enhancement of the historic environment, which is part of green infrastructure. Overall, however, the focus is more on preservation than enhancement.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>4: Material assets</b><br/>                 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>+/-</p> | <p>The policy requires the delivery of integrated and multifunctional green infrastructure, which should support most of the elements of this SA objective. In some cases, a GI-led approach may seek the restoration of a minerals site that was originally best and most versatile (BMV) agricultural land, to achieve a more diverse and multi-functional use. This may still seek to include BMV but, post-extraction, the original land may not be capable of being returned to such a high quality. Other parts of the MLP, most importantly <i>Policy MLP 20 Agriculture and Soils</i>, will help to ensure that losses of BMV are minimised.</p> | <p>No mitigation is considered necessary.</p> |

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| whilst safeguarding open space/green infrastructure.  |    |  |  |
| <b>5: Natural Resources</b><br>Protect and enhance water and air quality.   | +  | The requirement for a resource-efficient, green infrastructure-led approach should be positive for water and air quality, although the policy focuses more on protection than enhancement.   | No mitigation is considered necessary.   |
| <b>6: Climate Change and energy</b><br>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's requirements for proposals to deliver integrated and multifunctional green infrastructure should help to reduce the causes of climate change. The policy also requires developments to be resilient to climate change, and to be resource efficient. These issues should have a significant positive effect on this SA objective. The policy does not, however, include any requirement for on-site generation of renewable energy. If this were to be included, it would further improve the policy's positive effects on this SA objective. | Consideration should be given to requiring a proportion of a development's energy usage to be met from on-site generation of renewable energy. |
| <b>7: Flooding</b><br>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's requirements for proposals to deliver integrated and multifunctional green infrastructure, to take account of local context, to be resilient to climate change, and to not give rise to unacceptable hazards, can all have positive benefits for flood prevention. As such, this policy should have a significant positive effect on this SA objective.   | No mitigation is considered necessary.   |
| <b>8: Access to Services</b><br>Improve the quality of, and equitable   | 0  | No significant impacts are likely to arise for this SA objective.  | No mitigation is considered necessary.   |

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| <p>access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>          |                                       |  |   |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>                               | <p style="text-align: center;">+</p>  | <p>The policy's requirements for proposals to not give rise to unacceptable hazards should contribute to this objective, although this is more focussed on safeguarding, rather than improving health.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p style="text-align: center;">++</p> | <p>The policy's requirements for proposals to be resource efficient is directly in line with this SA objective.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | <p style="text-align: center;">0</p>  | <p>The provision of green infrastructure can help to contribute towards sustainable transport, but overall this policy is considered to be unlikely to have an impact on this SA objective.</p>            | <p>No mitigation is considered necessary.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the</p>   | <p style="text-align: center;">0</p>  | <p>This policy is considered to be unlikely to have an impact on this SA objective.</p>  | <p>No mitigation is considered necessary.</p> |

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| <p>infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>  |            |  |   |
| <p><b>I3: Provision of housing</b><br/>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>+/?</p> | <p>The policy's requirements for proposals to deliver integrated and multifunctional green infrastructure, to take account of local context, to deliver restoration and after-use at the earliest opportunity, with means to secure it in the long term, and to not give rise to unacceptable hazards will all help to ensure that the local environment in close proximity to minerals workings remains clean, safe and pleasant. However, part (h) of the policy recognises that there may be some degree of cumulative impact from other development, and requires only that this impact is not "unacceptable". 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> | <p>No mitigation is considered necessary.</p> |
| <p><b>I4: Participation by all</b><br/>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> | <p>0</p>   | <p>The policy is considered to be unlikely to have an impact on this SA objective.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>I5: Technology, innovation and inward</b></p>   | <p>0</p>   | <p>Although the policy does require proposals to be resource efficient, it is considered unlikely that this will directly contribute towards this SA objective.</p>  | <p>No mitigation is considered necessary.</p> |

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| <p><b>investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> |   |  |  |
| <p><b>I6: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | 0 | This policy is considered to be unlikely to have an impact on this SA objective. | No mitigation is considered necessary. |
| <p><b>I7: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and antisocial behaviour.</p>   | 0 | This policy is considered to be unlikely to have an impact on this SA objective. | No mitigation is considered necessary. |

### Appraisal of policies: Policy MLP 16 Health and Quality of Life

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation                   |
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| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.                               | +                            | The policy requires the mitigation of visual impact, 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 controlled to an "acceptable level".  | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.                                    | +                            | 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, but there is nothing about enhancement. | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource- | +                            | As for SA objective 2, 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 England <sup>39</sup> recognises that "Noise, vibration and other pollutants or nuisances" 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 preservation, and focuses only on reducing harm to an acceptable level, meaning that some degree of harm – even if very minor  | No mitigation is considered necessary. |

<sup>39</sup> Historic England (July 2015) The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning: 3

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| <p>efficient development which respects local character and distinctiveness.</p>  |   | <p>– could occur.</p>  |   |
| <p><b>4: Material assets</b><br/>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 | <p>The policy's requirement to address matters of health and wellbeing, as well as some other issues (including air quality) can help to contribute to the safeguarding of green infrastructure, but overall the linkages are considered too minor to allow a positive rating, and so no overall effect has been recorded against this SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | + | <p>This policy directly supports part of SA objective 5 through requiring the mitigation of negative impacts on air quality. Whilst this should help to protect air quality, it stops some way short of actual enhancement.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable</p>   | 0 | <p>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |

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| energy and low-carbon sources.  |   |  |  |
| <p><b>7: Flooding</b><br/>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 | No impacts on this SA objective have been identified.  | No mitigation is considered necessary.   |
| <p><b>8: Access to Services</b><br/>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.  | No mitigation is considered necessary.   |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | + | As with SA objective 5, the policy will help to reduce negative health impacts, but is unlikely to lead to actual improvements. A net gain in environmental quality, with consequent health improvements, may be achieved as a result of other MLP policies. | <p>Consideration should be given to seeking actual enhancement of health and quality of life, as well as mitigation of harm, within this policy. This would encourage positive outcomes.</p> <p>Criterion (h), covering 'health and wellbeing', should be removed.</p> |



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| <p><b>10: Waste</b><br/>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 fines 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. The policy is therefore likely to support, albeit indirectly, the achievement of the waste hierarchy.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>11: Traffic and transport</b><br/>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, and visual impact), the minimisation of these will necessarily mean the minimisation of unnecessary transport movements.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>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.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>13: Provision of housing</b><br/>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, however, recognise that there may be some degree of harm, providing it does not exceed an "acceptable level". 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> | <p>No mitigation is considered necessary.</p> |

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| <p><b>14: Participation by all</b><br/>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.  | No mitigation is considered necessary. |
| <p><b>15: Technology, innovation and inward investment</b><br/>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. | No mitigation is considered necessary. |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and 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.   | No mitigation is considered necessary. |

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| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p> | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> |  |
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## Appraisal of policies: Policy MLP 17 Access and Recreation

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
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| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.                 | ?                            | The policy does not specifically identify the need for new or amended rights of way or publically accessible greenspace to safeguard and strengthen landscape character and quality, or to minimise visual impact. Part (a) does, however, seek to integrate "other green infrastructure components", of which the landscape is one.<br>The reasoned justification does make clear, at 7.105, that public access "may need to be restricted in some areas, for example ... to protect ... sensitive landscapes". Other parts of the MLP, in particular <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 19 Landscape</i> , should help to ensure that any rights of way or greenspaces take landscape and visual impact into account. | Consideration should be given to adding a qualification to the policy wording to require that public access networks should be improved "subject to environmental safeguards". |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.                      | ?                            | The policy does not explicitly identify the need for new or amended rights of way or publically 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 7.105, that public access "may need to be restricted in some areas, for example ... to protect ... sensitive habitats". Other parts of the MLP, in particular <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i> , should help to ensure that any rights of way or greenspaces take biodiversity and geodiversity into account.                                       | Consideration should be given to adding a qualification to the policy wording to require that public access networks should be improved "subject to environmental safeguards". |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed | ?                            | The policy does not explicitly identify the need for new or amended rights of way or publically 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 is one. The reasoned justification does make clear, at 7.105, that public access "may need to be restricted in some areas, for example ... to protect ... heritage assets". Other parts of the MLP, in particular <i>Policy MLP 23 Historic Environment</i> , should help to ensure that any rights of way or   | Consideration should be given to adding a qualification to the policy wording to require that public access networks should be improved "subject to environmental safeguards". |

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| and resource-efficient development which respects local character and distinctiveness.  |   | greenspaces take cultural heritage, architecture and archaeology into account.  |  |
| <b>4: Material assets</b><br>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. | + | Rights of way and publically 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. | No mitigation is considered necessary. |
| <b>5: Natural Resources</b><br>Protect and enhance water and air quality.   | 0 | No impacts on this SA objective have been identified.   | No mitigation is considered necessary. |
| <b>6: Climate Change and energy</b><br>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated  | 0 | No impacts on this SA objective have been identified.   | No mitigation is considered necessary. |

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| <p>from renewable energy and low-carbon sources.</p>  |    |  |   |
| <p><b>7: Flooding</b><br/>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 impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>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 is directly concerned with improving the quality of and access to rights of way and greenspace, which are considered to be 'services' (or a means of accessing services) under this SA objective and are valuable at a local and national level. Part b(ii) of the policy, in calling for enhancements, will help to ensure that these services are accessible to the elderly and disabled (paragraph 7.107 of the reasoned justification makes clear that these are included within "enhancements").</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | ++ | <p>Rights of way and publically accessible greenspace can help people to become healthy and stay healthy, through encouraging outdoor exercise. The policy's strong support for these assets should contribute to meeting this SA objective.</p>   | <p>No mitigation is considered necessary.</p> |

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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>                               | <p>0</p>  | <p>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | <p>++</p> | <p>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.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>0</p>  | <p>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>13: Provision of housing</b><br/>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>+</p>  | <p>Rights of way and publically 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.</p> | <p>No mitigation is considered necessary.</p> |

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| <p><b>14: Participation by all</b><br/>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. | No mitigation is considered necessary. |
| <p><b>15: Technology, innovation and inward investment</b><br/>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. | No mitigation is considered necessary. |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>  | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |



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| <p><b>I7: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p> | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> |  |
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**Appraisal of policies: Policy MLP 18 Biodiversity**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
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| <p><b>1: Landscape</b><br/>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. As such, the policy should support that part of the SA objective which seeks to safeguard landscape character and quality. The requirement to integrate "<i>other green infrastructure components where appropriate</i>" should also have a positive effects on the landscape, which is a key part of green infrastructure. The policy does not, however, provide as much of a focus on strengthening these elements, as it is only part (f) that calls for net gain, rather than simply the minimisation of loss.</p>   | <p>Consideration should be given to seeking net gain across all areas and for all assets, whilst also recognising that minimising loss may be the only practical solution in some cases.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>      | ++                           | <p>The policy seeks to protect and enhance biodiversity and, as such, it strongly supports this SA objective. It does not, however, provide as much of a focus on enhancement as it does on protection (and even the degree of protection is open to question, as most parts of the policy aim to avoid or manage loss to an acceptable degree). It is only part (f) that calls for net gain, rather than simply the minimisation of loss. The policy should, however, help to ensure that any losses are minor, and would not be significant in SA terms; the achievement of overall net gain should outweigh any specific minor losses, and so it would be inappropriate to downgrade the SA score on this basis. 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. There is potential, however, to strengthen this further, including by moving part (f) to the top of the list (the order is not a hierarchy, but it would be beneficial to have enhancement at the top).<br/>Although there is a standalone policy on geodiversity, this policy also provides a positive context for protecting geological assets, as SSSIs include biological as well as geological sites, and "<i>other green infrastructure components</i>" can include geodiversity.</p> | <p>Consideration should be given to seeking net gain across all areas and for all assets, whilst also recognising that minimising loss may be the only practical solution in some cases.</p> |

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| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>   | <p>+</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.</p>   | <p>Consideration should be given to seeking net gain across all areas and for all assets, whilst also recognising that minimising loss may be the only practical solution in some cases.</p> |
| <p><b>4: Material assets</b><br/>                 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>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. There is potential for a net gain in biodiversity over the pre-development status to actually reduce the quality and quantity of agricultural land, but this is considered to be too minor to affect the rating against this SA objective.</p> | <p>No mitigation is considered necessary.</p>  |
| <p><b>5: Natural Resources</b><br/>                 Protect and enhance water and air quality.</p>   | <p>+</p> | <p>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</p>   | <p>No mitigation is considered necessary.</p>  |

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|   |   | the SA objective may not be as strongly supported as it could be.   |  |
| <p><b>6: Climate Change and energy</b><br/>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>                          | + | 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. There is a minor risk that the protection of biodiversity could compromise opportunities to maximise renewable energy, as there may be a degree of incompatibility between renewable and low-carbon energy development and habitat protection (e.g. risk of ultrasonic and collision harm to bats and birds, respectively, in the development of wind turbines). Conversely, some solar farm sites can offer benefits to biodiversity through, for example, the inclusion of wildflower planting between panels to encourage pollinators and other wildlife. Overall, it is considered that a minor positive rating is justified for this SA objective. | No mitigation is considered necessary. |
| <p><b>7: Flooding</b><br/>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 requirement to integrate other green infrastructure components where appropriate should help to ensure that flooding is taken into account.   | No mitigation is considered necessary. |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity,</p>   | + | 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.   | No mitigation is considered necessary. |

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| disability, socio-economic status or educational attainment.   |   |  |  |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the population and reduce inequalities in health.                               | + | 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. | No mitigation is considered necessary. |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal. | 0 | Waste generated through minerals processing is often stored on site and/or used in restoration. This can mean significant landforms that have the potential to impact on biodiversity. In terms of this SA objective, however, no impacts have been identified.  | No mitigation is considered necessary. |
| <b>11: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.                                     | + | 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.                  | No mitigation is considered necessary. |
| <b>12: Growth with prosperity for all</b><br>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the    | 0 | No impacts on this SA objective have been identified.  | No mitigation is considered necessary. |

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| benefits, urban and rural.  |   |   |  |
| <b>I3: Provision of housing</b><br>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.  | + | 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. | No mitigation is considered necessary. |
| <b>I4: Participation by all</b><br>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.   | No mitigation is considered necessary. |
| <b>I5: Technology, innovation and inward investment</b><br>Promote and support the development of new technologies, of high   | 0 | No impacts on this SA objective have been identified.   | No mitigation is considered necessary. |

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| value and low impact, especially resource efficient technologies and environmental technology initiatives.   |   |   |  |
| <b>16: Population (skills and education)</b><br>Raise the skills levels and qualifications of the workforce. | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |
| <b>17: Population (crime &amp; fear of crime)</b><br>Reduce crime, fear of crime and antisocial behaviour.   | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |

## Appraisal of policies: Policy MLP 19 Landscape

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation                   |
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| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.  | ++                           | The policy strongly supports the safeguarding and strengthening of landscape character and quality, although part (b) seeks only to prevent harm, rather than ensure enhancement. Part (c) is positively worded, and references to landscape character and local distinctiveness are welcomed. The policy does not refer to visual impact, but this is covered elsewhere through <i>Policy MLP 16 Health and Quality of Life</i> .  | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.   | +                            | The policy does not directly concern biodiversity, although it does recognise in part (c) that landscape is part of green infrastructure, and the integration of " <i>other green infrastructure components</i> " should help to ensure positive outcomes for biodiversity.   | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness. | ++                           | Landscape is a part of the cultural and historic environment, and this policy requires development to " <i>strengthen the inherent landscape character and contribute to local distinctiveness</i> ". The landscape is 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 strengthen landscape character and contribute to local distinctiveness, which accord very strongly with this SA objective. | No mitigation is considered necessary. |



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| <p><b>4: Material assets</b><br/>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, warrants a minor positive rating.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | 0 | <p>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 positive rating against this SA objective.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>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>No significant direct linkages have been identified between the policy and this SA objective. 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 impacts on the SA objective, depending on the specific circumstances of each development.</p> | <p>No mitigation is considered necessary.</p> |

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| <p><b>7: Flooding</b><br/>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 | 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 positive rating against this SA objective. | No mitigation is considered necessary. |
| <p><b>8: Access to Services</b><br/>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 | 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 positive rating against this SA objective.              | No mitigation is considered necessary. |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 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 positive rating against this SA objective.              | No mitigation is considered necessary. |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1)</p>   | 0 | No impacts on this SA objective have been identified.  | No mitigation is considered necessary. |

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| reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   |   |  |  |
| <b>I1: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | 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 pattern, this is not considered sufficient to warrant a positive rating against this SA objective. | No mitigation is considered necessary. |
| <b>I2: Growth with prosperity for all</b><br>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.  | No mitigation is considered necessary. |
| <b>I3: Provision of housing</b><br>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments. | + | A high-quality landscape is a valuable part of ensuring a pleasant local environment. This will be especially important in areas close to mineral workings.  | No mitigation is considered necessary. |
| <b>I4: Participation by all</b><br>Provide opportunities for   | 0 | No impacts on this SA objective have been identified.  | No mitigation is considered necessary. |

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| <p>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>   |   |  |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>                 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>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>16: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p>   | 0 | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear</p>  | 0 | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |

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| of crime and antisocial behaviour. |  |  |  |
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## Appraisal of policies: Policy MLP 20 Agriculture and Soils

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation                   |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>   | ?                            | <p>The stripping and storing of soils and other arisings, especially through storage and bunds, can have significant 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). Although the policy does not allude to these, it is considered that other elements of the MLP – including <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 19 Landscape</i> - should help to ensure that these impacts are managed appropriately.</p> | No mitigation is considered necessary. |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>  | ?                            | <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. As such, it is important that biodiversity and geodiversity are fully considered. Although these issues do not form part of the policy, they are covered elsewhere in the MLP – in particular <i>Policy MLP 18 Biodiversity</i> and <i>Policy MLP 21 Geodiversity</i>.</p>  | No mitigation is considered necessary. |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and</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). The policy does not refer to these issues, but they are addressed in other parts of the MLP, in particular <i>Policy MLP 23 Historic Environment</i>.</p>  | No mitigation is considered necessary. |

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| distinctiveness.  |   |  |   |
| <p><b>4: Material assets</b><br/>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 absence of any such safeguard, and the potential value of its inclusion, is discussed elsewhere in this SA and is not necessarily relevant to this policy. The policy does seek to integrate "other green infrastructure components where appropriate", which accords with the green infrastructure elements of this SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | ? | <p>The stripping and storing of soils and other arisings can potentially affect water and air quality, but other parts of the MLP, including <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 22 Water Environment</i> set out to cover these issues.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>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>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 accorded a minor positive rating against this SA objective.</p>   | <p>No mitigation is considered necessary.</p> |

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| <p><b>7: Flooding</b><br/>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. There is, however, no need for this policy to include these issues, as these are already considered elsewhere in the MLP, including in <i>Policy MLP 22 Water Environment</i>.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>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 impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | ? | <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, etc. Conversely, the inappropriate siting and size of such features may be detrimental to local environments. As stated for the appraisal against SA objective 1, other elements of the MLP – including <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 19 Landscape</i> - should help to ensure that these impacts are managed appropriately.</p> | <p>No mitigation is considered necessary.</p> |



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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>                               | <p>?</p> | <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. The circumstances may vary and, as such, it is not possible to give a definitive SA rating.</p>   | <p>No mitigation is considered necessary.</p>  |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | <p>?</p> | <p>The conservation of soil resources should help to ensure that soils and other arisings are managed on site, thereby reducing the need to move them elsewhere. The policy and reasoned justification, however, need to be clearer on the need for on-site management where possible.</p>   | <p>The policy (as well as the reasoned justification) should specifically state that on-site management is preferable to off-site management. This distinction could have implications on traffic movements and should be clarified.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>0</p> | <p>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p>  |
| <p><b>13: Provision of housing</b><br/>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>?</p> | <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, etc. Conversely, the inappropriate siting and size of such features may be detrimental to local environments. As stated for the appraisal against SA objective 1, other elements of the MLP – including <i>Policy MLP 16 Health and Quality of Life</i> and <i>Policy MLP 19 Landscape</i> - should help to ensure that these impacts are managed appropriately.</p> | <p>No mitigation is considered necessary.</p>  |

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| <p><b>14: Participation by all</b><br/>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. | No mitigation is considered necessary. |
| <p><b>15: Technology, innovation and inward investment</b><br/>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. | No mitigation is considered necessary. |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>  | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |

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| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p> | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
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## Appraisal of policies: Policy MLP 21 Geodiversity

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation   |
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| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.  | +                            | 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.   | No mitigation is considered necessary.   |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.   | +                            | The policy should go some way to conserving geodiversity, but the focus is overwhelmingly on minimising the negative effects, rather than securing net gains in the quality and quantity of geodiversity assets. The only part of the policy that does seek enhancement is (d), but this only calls for developments to optimise " <i>opportunities to improve the legibility and understanding of geodiversity...</i> ", rather than improving the physical condition of the assets themselves. This could mean that interpretation boards and information sheets are produced, but the asset itself suffers decline through physical impact or destruction, or fails to be improved by, for example, the removal of built-up atmospheric deposits and vegetation. | Greater emphasis could be given to improving the number and condition of geodiversity assets.  |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which | +                            | Geodiversity is a key part of local character and distinctiveness. The policy should contribute to the conservation of this resource, but the focus on enhancement is not as strong.  | Part (d) of the policy should be amended to become " <i>will optimise opportunities to improve the condition, legibility and understanding of geodiversity, integrating other green infrastructure components where appropriate</i> ". |

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| <p>respects local character and distinctiveness.</p>  |          |  |   |
| <p><b>4: Material assets</b><br/>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>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, warrants a minor positive rating.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>0</p> | <p>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy</p>  | <p>0</p> | <p>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |

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| generated from renewable energy and low-carbon sources.   |   |  |   |
| <b>7: Flooding</b><br>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.  | No mitigation is considered necessary.  |
| <b>8: Access to Services</b><br>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 " <i>optimise opportunities to improve the legibility and understanding of geodiversity</i> ", the policy should 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 rating. The policy does not seek to improve access to geodiversity assets; greater access may or may not be desirable, depending on the circumstances. | Consideration should be given to also seeking greater access to, as well as interpretation of, geodiversity, where appropriate. |
| <b>9: Health and amenity</b><br>Improve the health and well-being of  | 0 | No impacts on this SA objective have been identified.  | No mitigation is considered necessary.  |

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| the population and reduce inequalities in health.  |   |   |  |
| <b>I0: Waste</b><br>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.   | No mitigation is considered necessary. |
| <b>I1: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | 0 | No impacts on this SA objective have been identified.   | No mitigation is considered necessary. |
| <b>I2: Growth with prosperity for all</b><br>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.   | No mitigation is considered necessary. |
| <b>I3: Provision of housing</b><br>Provide decent affordable housing for all, of the right   | 0 | In seeking to improve the legibility and understanding of geodiversity, the policy could contribute to pleasant local environments. These benefits, however, are considered too minor to result in a positive rating for this SA objective. | No mitigation is considered necessary. |

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| <p>quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>  |          |  |   |
| <p><b>I4: Participation by all</b><br/>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> | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>I5: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology</p>                       | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |



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| initiatives.   |   |   |  |
| <b>16: Population (skills and education)</b><br>Raise the skills levels and qualifications of the workforce. | 0 | In the strict terms of this SA objective, the policy may not provide measurable benefits, but improving the legibility and understanding of geodiversity can help to educate people on the history and management of geological assets. | No mitigation is considered necessary. |
| <b>17: Population (crime &amp; fear of crime)</b><br>Reduce crime, fear of crime and antisocial behaviour.   | 0 | No impacts on this SA objective have been identified.   | No mitigation is considered necessary. |

## Appraisal of policies: Policy MLP 22 Water Environment

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation                   |
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| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.   | +                            | 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.  | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.  | +                            | Biodiversity depends on a healthy environment, including a sufficient quality and quantity of water. 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 (d) calls for developments to " <i>optimise gains for the water environment</i> ", and this should have 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. | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local | +                            | The main relationship between water and the historic environment is in the risk posed by flooding on an asset's historic fabric. Part (a) of the policy, in seeking to avoid increasing flood risk, should help to reduce the potential for harm to heritage assets, although actual enhancement (rather than just mitigating harm) may be less likely. Requiring the integration of other green infrastructure components where appropriate should also help to realise historic environment benefits, as the historic environment is a key part of green infrastructure.   | No mitigation is considered necessary. |

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| <p>character and distinctiveness.</p>   |          |  |   |
| <p><b>4: Material assets</b><br/>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>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, warrants a minor positive rating.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>+</p> | <p>The policy should help to protect water quality. Most of the policy detail, however, seems to be about managing harm, and so absolute protection of all sensitive receptors may not be possible, although the policy must seek a balance between an "acceptable" degree of harm, and net gain overall. Part (d) of the policy is more positive and may help to achieve water quality enhancement.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy</p>  | <p>+</p> | <p>The policy should help to adapt to climate change as manifested by increased flood risk, although it focusses mainly on reducing the scale of harm rather than actual reduction of causes. The requirement in part (b) for risk to be managed by suitable adaptation will help to meet this SA objective.</p>   | <p>No mitigation is considered necessary.</p> |

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| <p>generated from renewable energy and low-carbon sources.</p>  |            |   |  |
| <p><b>7: Flooding</b><br/>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>The policy, especially part (a), should help to meet this SA objective. The flooding aspect of the policy is concerned more with the impacts of minerals development on neighbouring properties/land, rather than the location of the minerals development itself in relation to flood risk. This is, however, covered elsewhere in the locational sections of the MLP. Whilst the SA objective seeks only to reduce flooding – rather than achieving flood betterment – mineral sites may offer opportunities, depending on the specific circumstances, to improve flood storage. The potential for mineral working to provide increased flood capacity is recognised in paragraph 7.181, but these opportunities are not included in the policy.</p> | <p>Consideration should be given to including within the policy the potential role of active and restored minerals sites to positively contribute to increasing flood storage, thereby reducing flood risk elsewhere (rather than simply avoiding increasing risk). This could be by achieved by modifying criterion (a) such that it begins [the proposed development] "will reduce or avoid increasing flood risk...."</p> |
| <p><b>8: Access to Services</b><br/>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>Making sure that flood risk does not threaten neighbouring uses is crucial in maintaining access to services. Under a strict reading of the SA objective, the most relevant part of the policy - part (a) – seeks only to avoid increasing risk, rather than actually reducing risk, and so the likelihood of improving access may be limited. Part (d)'s requirement to optimise gains, however, is more positive and, with its focus on green infrastructure, could see improvements to flood risk and consequentially improvements to quality of and equitable access to services.</p>  | <p>No mitigation is considered necessary.</p>  |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of</p>  | <p>+/?</p> | <p>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 part (d) which seeks to "optimise gains for the</p>  | <p>No mitigation is considered necessary.</p>  |

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| the population and reduce inequalities in health.  |     | water environment".   |  |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.                         | 0/? | No specific impacts on this SA objective have been identified, although there is the potential for minerals operations and processing to generate significant quantities of waste water, and this needs to be treated appropriately in order to minimise pollution risk. These issues should be addressed through other elements of the MLP, including <i>Policy MLP 15 Sustainable Design Principles</i> and <i>Policy MLP 16 Health and Quality of Life</i> , which should help to ensure the efficient use of resources and the minimisation of waste. | No mitigation is considered necessary. |
| <b>11: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | 0   | No impacts on this SA objective have been identified.   | No mitigation is considered necessary. |
| <b>12: Growth with prosperity for all</b><br>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.   | No mitigation is considered necessary. |
| <b>13: Provision of housing</b><br>Provide decent affordable housing for all, of the right   | 0   | In seeking to reduce flood risk and optimise gains for the water environment, the policy could help to ensure that local environments remain clean, safe and pleasant. These benefits, however, are considered too minor to result in a positive rating for this SA objective.  | No mitigation is considered necessary. |

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| <p>quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>  |          |  |   |
| <p><b>I4: Participation by all</b><br/>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> | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>I5: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology</p>                       | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |

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| initiatives.   |   |   |  |
| <b>I6: Population (skills and education)</b><br>Raise the skills levels and qualifications of the workforce. | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |
| <b>I7: Population (crime &amp; fear of crime)</b><br>Reduce crime, fear of crime and antisocial behaviour.   | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |

**Appraisal of policies: Policy MLP23 Historic environment**

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation                          |
|--|------------------------------|--|---|
| <p><b>1: Landscape</b><br/>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. These linkages are well expressed in paragraph 7.210 of the reasoned justification. This policy, in seeking to protect and enhance the historic environment, may have secondary positive impacts on landscape and visual impact. Part (b), in protecting an asset's setting, will help to safeguard (but not strengthen) landscape character and quality and minimise negative visual impact. Part (c) of the policy seeks to integrate "other green infrastructure components where appropriate", which can include the landscape. As such, the policy warrants a minor positive rating against this SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>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 warrants a minor positive rating against this SA objective.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and</p> | ++                           | <p>The policy sets out to ensure the protection and enhancement of the historic environment and, as such, should secure significant benefits against this SA objective. However, parts (a) and (b) allow that some degree of loss to some assets may occur, and is more about limiting harm than achieving net gain. Part (c) does make provision for enhancement, with the overall aim of the policy seeming to be to ensure that, overall, any minor losses are more than made up for by overall enhancement.</p>  | <p>No mitigation is considered necessary.</p> |



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| distinctiveness.  |   |  |   |
| <p><b>4: Material assets</b><br/>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>There are unlikely to be significant direct impacts on this SA objective, but part (c) 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, a minor positive rating is awarded.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | 0 | <p>Although there may be some minor secondary benefits on this SA objective arising from this policy, overall it is considered that there will be no effect.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>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>As with <i>Policy MLP 19 Landscape</i>, no significant direct linkages have been identified between the policy and this SA objective. 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 positive and negative impacts on the SA objective, depending on the specific circumstances of each development.</p> | <p>No mitigation is considered necessary.</p> |

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| <p><b>7: Flooding</b><br/>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>The integration of other green infrastructure components may offer some benefits to this SA objective, but overall this is considered to minor to warrant a positive rating.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>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>The integration of other green infrastructure components may offer some benefits to this SA objective, but overall this is considered to minor to warrant a positive rating.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0 | <p>The integration of other green infrastructure components may offer some benefits to this SA objective, but overall this is considered to minor to warrant a positive rating.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1)</p>   | 0 | <p>No impacts on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |

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| reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   |   |  |  |
| <b>I1: Traffic and transport</b><br>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 minor to warrant a positive rating. | No mitigation is considered necessary. |
| <b>I2: Growth with prosperity for all</b><br>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.  | No mitigation is considered necessary. |
| <b>I3: Provision of housing</b><br>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 rating has been awarded for this SA objective.         | No mitigation is considered necessary. |
| <b>I4: Participation by all</b><br>Provide opportunities for   | 0 | No impacts on this SA objective have been identified.  | No mitigation is considered necessary. |

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| <p>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>  |   |   |  |
| <p><b>15: Technology, innovation and inward investment</b><br/>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. | No mitigation is considered necessary. |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear</p>  | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |

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| of crime and antisocial behaviour. |  |  |  |
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**Appraisal of policies: Policy MLP 24 Transport To and From Site**

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects  | Potential mitigation  |
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| <p><b>1: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p>  | +                            | <p>Part (c) 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 landscape is safeguarded and visual impact minimised. The policy does not, however, consider opportunities to strengthen the environment.</p>  | <p>Green infrastructure opportunities should be included within the policy.</p> |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>   | +                            | <p>Part (c) 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. 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>Green infrastructure opportunities should be included within the policy.</p> |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | +                            | <p>Part (c) 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 cultural heritage, architecture and archaeology are preserved. The policy does not, however, consider opportunities to enhance these elements of the environment.</p>  | <p>Green infrastructure opportunities should be included within the policy.</p> |

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| <p><b>4: Material assets</b><br/>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>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. The policy does not, however, include the need to contribute to green infrastructure, although this is recognised to an extent in the reasoned justification at paragraph 7.228.</p>  | <p>Green infrastructure opportunities should be included within the policy.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>+</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 water and air quality are protected.</p>  | <p>No mitigation is considered necessary.</p>                                   |
| <p><b>6: Climate Change and energy</b><br/>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>For haulage, the policy's call to optimise "opportunities for 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). For movements of people to and from the site, the most climate-friendly travel modes may indeed be by road: by walking or cycling and, to a lesser extent, by bus. However, 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</p> | <p>No mitigation is considered necessary.</p>                                   |

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|   |   | likely to be diesel-powered, with consequent carbon emissions, and the policy does include the need for alternatives to be " <i>practicable or environmentally preferable</i> " 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 (c) for development to demonstrate that " <i>transport would not have an unacceptable adverse impact on the environment or quality of life</i> ". |  |
| <b>7: Flooding</b><br>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. | ? | Roads and their immediate surroundings can play a valuable 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. Although the policy as drafted is unlikely to have any significant effects on flooding, there are opportunities to be more positive and to call for flooding issues (as part of wider green infrastructure) to be recognised.                         | Green infrastructure opportunities should be included within the policy. |
| <b>8: Access to Services</b><br>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. Part (d) is welcomed, as this should allow for access to employees and visitors to the site. The policy, however, seeks only to ensure adequate "access", which may or may not improve upon the baseline position.   | No mitigation is considered necessary.                                   |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the  | 0 | 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  | No mitigation is considered necessary.                                   |



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| <p>population and reduce inequalities in health.</p>   |          | <p>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><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | <p>+</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 largely considered through other policies and the spatial strategy of the MLP.</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). The policy may not have such positive impacts when considering how employees and visitors will travel to and from sites; although paragraph 7.216 of the reasoned justification states that "<i>Transport includes employees' and visitors' vehicles</i>", it is unlikely that many employees will be able to access the site by water (and certainly not by conveyor or pipeline). The movement of employees and visitors by road may in fact be the most sustainable option, as the impacts and benefits will depend on the specific transport mode. Walking, cycling and buses can all be sustainable, although many journeys may be made by car. Part (d) will help to ensure that these sustainable modes are provided for.</p> | <p>No mitigation is considered necessary.</p> |

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| <p><b>I2: Growth with prosperity for all</b><br/>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.  | No mitigation is considered necessary. |
| <p><b>I3: Provision of housing</b><br/>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 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. The policy recognises the potential impacts that traffic movements could have on sensitive receptors, including householders, and the approach of minimising such harm is welcomed. The policy does, however, accept that a degree of negative impact that is less than "unacceptable" could occur. | No mitigation is considered necessary. |
| <p><b>I4: Participation by all</b><br/>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.  | No mitigation is considered necessary. |

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| <p><b>15: Technology, innovation and inward investment</b><br/>                 Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> | <p>0</p> | <p>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.</p> | <p>Consideration should be given to recognising and supporting new technologies, such as electric vehicles.</p> |
| <p><b>16: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p> | <p>No impacts on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p>   |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p>   | <p>0</p> | <p>No impacts on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p>   |

### Appraisal of policies: Policy MLP 25 Transport Within Mineral Sites

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation                   |
|--|------------------------------|--|--|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.                               | +                            | In requiring transport within minerals sites to minimise the potential for adverse impacts and to optimise the opportunities for green infrastructure, the policy should help to ensure that landscape character is safeguarded and strengthened and that negative visual impact is minimised. The policy is, however, very generic in its terms and so firm conclusions are difficult to draw. There may be a conflict between what is "sustainable" (in terms of, for example, carbon emissions), and what minimises the potential for "adverse impacts" (which may include landscape and visual impacts). Conveyors may offer a more climate-friendly solution than dump trucks, but this will depend on the circumstances, and whilst a dump truck may be out of site from sensitive receptors for much of the time, a semi-permanent fixture such as a conveyor could potentially cause greater visual harm over an uninterrupted period. | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.                                    | +                            | In requiring transport within minerals sites to minimise the potential for adverse impacts and to optimise the opportunities for green infrastructure, the policy should help to conserve and enhance biodiversity and geodiversity, although the lack of detail in the policy makes it difficult to draw firm conclusions.  | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource- | +                            | In requiring transport within minerals sites to minimise the potential for adverse impacts and to optimise the opportunities for green infrastructure, the policy should help to preserve and enhance the historic environment. The need for transport to be sustainable should help to satisfy that part of the SA objective calling for "resource efficient development" but, as noted for the landscape SA objective, this may not necessarily accord with that part of the SA objective which seeks to "respect local character and distinctiveness". This will depend on the specific circumstances of each case.   | No mitigation is considered necessary. |

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| <p>efficient development which respects local character and distinctiveness.</p>  |   |   |   |
| <p><b>4: Material assets</b><br/>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>Many aspects of this SA objective are unlikely to be affected by the policy, although optimising "<i>the opportunities for green infrastructure</i>" is considered to be a minor benefit.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | + | <p>In minimising the "<i>potential for adverse impacts</i>" and optimising "<i>the opportunities for green infrastructure</i>", the policy should help to protect and enhance water and air quality.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated</p>  | + | <p>In requiring transport to be sustainable and to minimise the potential for adverse impacts, the policy should help to ensure climate change mitigation. The requirement to optimise the opportunities for green infrastructure could also help to adapt to climate change.</p> | <p>No mitigation is considered necessary.</p> |

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| <p>from renewable energy and low-carbon sources.</p>  |   |   |  |
| <p><b>7: Flooding</b><br/>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>There is little direct impact from the policy on this SA objective, although the requirement for transport to optimise the opportunities for green infrastructure could contribute to flood alleviation. Conversely, haul roads within the site could potentially act as conduits for flood water and exacerbate the impacts of flooding within and beyond the site.</p> <p>Paragraph 7.184 of the reasoned justification notes that "<i>buildings and processing plant should not be located in the flood plain</i>". It is unclear whether some elements of transport infrastructure within the site - such as conveyors – may fall within these categories.</p> | <p>Greater clarification on what (if any) aspects of transport infrastructure would constitute "processing plant" would be beneficial.</p> |
| <p><b>8: Access to Services</b><br/>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 impacts on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p>  |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | ? | <p>The movement of material within a minerals site can have an impact on the health and wellbeing of those living nearby through noise, dust, and visual impact. The exact scale and duration of impacts cannot be known at this stage. A conveyor may be a quieter option than a dump truck in terms of maximum decibels, but the conveyor is more likely to be operating uninterrupted, as opposed to the more intermittent impacts of the dump trucks (at least in terms of maximum impact on a given receptor). Similarly, the noise and dust generated from different</p>  | <p>No mitigation is considered necessary.</p>  |

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|  |    | transport methods will vary. The policy's requirement for transport to minimise the potential for adverse impacts should ensure that impacts on health and wellbeing are fully considered, although as drafted it is unlikely to improve health and wellbeing, and nor is it likely to reduce inequalities.  |   |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.                         | 0  | Different transport methods may give rise to different waste impacts, but, overall, this policy is unlikely to have any impact on this SA objective.   | No mitigation is considered necessary.  |
| <b>11: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | ++ | In requiring transport movements within sites to be sustainable, the policy helps to satisfy that part of the SA objective concerned with moving towards more sustainable travel patterns. It is recognised that the different elements of the policy may need to be balanced on a case-by-case basis, and that the most sustainable solution may not necessarily also have the fewest impacts on sensitive receptors, or the greatest opportunities for green infrastructure. The policy does not specifically require the need to travel (in this case to transport material) to be reduced, and this would help to further satisfy this SA objective. | Consideration could be given to minimising the need for transport in the first place. This would allow the policy to perform better against this and other SA objectives. |
| <b>12: Growth with prosperity for all</b><br>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.  | No mitigation is considered necessary.  |
| <b>13: Provision of housing</b><br>Provide decent affordable housing   | +  | In requiring transport movements within sites to minimise the potential for adverse impacts and to optimise the opportunities for green infrastructure, local environments are more likely to become or remain clean, safe and pleasant. The degree to which on-site transport will satisfy  | No mitigation is considered necessary.  |

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| <p>for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>  |   | <p>this SA objective cannot be known at this stage, but the policy should help to ensure that local environmental impacts are minimised.</p> |   |
| <p><b>I4: Participation by all</b><br/>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 impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>I5: Technology, innovation and inward investment</b><br/>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>No impacts on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |



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| <p><b>16: Population (skills and education)</b><br/>                 Raise the skills levels and qualifications of the workforce.</p> | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>                 Reduce crime, fear of crime and antisocial behaviour.</p>   | 0 | No impacts on this SA objective have been identified. | No mitigation is considered necessary. |

**Appraisal of policies: Policy MLP 26 Sustainable Development Delivery**

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation                   |
|---|------------------------------|---|--|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.  | 0                            | It is possible that planning obligations to mitigate the impact of the development could help to ensure that landscape is strengthened and visual impact minimised, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.                      | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.   | 0                            | It is possible that planning obligations to mitigate the impact of the development could help to ensure that biodiversity and geodiversity are conserved and enhanced, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.                   | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness. | 0                            | It is possible that planning obligations to mitigate the impact of the development could help to ensure that cultural heritage, architecture and archaeology are preserved and enhanced, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective. | No mitigation is considered necessary. |
| <b>4: Material assets</b><br>Ensure efficient use   | 0                            | It is possible that planning obligations to mitigate the impact of the development could help to ensure that open space/green infrastructure is   | No mitigation is considered necessary. |

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| <p>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>safeguarded, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.</p>  |   |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | <p>0</p> | <p>It is possible that planning obligations to mitigate the impact of the development could help to protect and enhance natural resources, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b><br/>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>0</p> | <p>It is possible that planning obligations to mitigate the impact of the development could help to address climate change, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.</p>                | <p>No mitigation is considered necessary.</p> |

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| <p><b>7: Flooding</b><br/>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>It is possible that planning obligations to mitigate the impact of the development could help to avoid flood risk, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>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>It is possible that planning obligations to mitigate the impact of the development could help to ensure access to services, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.</p>                                   | <p>No mitigation is considered necessary.</p> |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | 0 | <p>It is possible that planning obligations to mitigate the impact of the development could help to improve health and wellbeing and reduce health inequalities, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1)</p>   | 0 | <p>No impacts on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |

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| reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.   |   |  |  |
| <b>I1: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.   | 0 | It is possible that planning obligations to mitigate the impact of the development could help to reduce the need to travel and move towards more sustainable travel patterns, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective. | No mitigation is considered necessary. |
| <b>I2: Growth with prosperity for all</b><br>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.       | 0 | Planning obligations to mitigate the impact of the development could help to ensure that infrastructure is sufficient to enable growth and prosperity, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.                        | No mitigation is considered necessary. |
| <b>I3: Provision of housing</b><br>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments. | 0 | Planning obligations to mitigate the impact of the development could help to ensure that local environments remain clean and pleasant, although this will depend on the specific circumstances. Overall, however, this policy is unlikely to have an effect on this SA objective.  | No mitigation is considered necessary. |
| <b>I4: Participation by all</b><br>Provide opportunities for   | 0 | No impacts on this SA objective have been identified.  | No mitigation is considered necessary. |

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| <p>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>  |          |  |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear</p>  | <p>0</p> | <p>No impacts on this SA objective have been identified.</p> | <p>No mitigation is considered necessary.</p> |

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| of crime and antisocial behaviour. |  |  |  |
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## (e) Appraisal of Chapter 8. Safeguarding minerals and supporting infrastructure

## Appraisal of policies: Policy MLP 27 Safeguarding Locally and Nationally Important Mineral Resources

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation                   |
|--|------------------------------|---|--|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact. | +                            | Although the policy does not seek to protect the landscape, and specific impacts will depend upon the development that comes forward within the Mineral Resource Consultation Areas, it can nevertheless, by its restrictive nature, potentially help to safeguard landscape character and minimise visual impact. These indirect effects could arise as a result of the first part of (b)(i) which requires non-exempt development to be refused (or effectively prevented through needing to retain mineral resources in situ). Although opportunities for enhancement of the landscape, from minerals restoration and/or the final development, will be similarly restricted, the potential for enhancement does not outweigh the avoidance of risk. | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.      | +                            | Although the policy does not seek to protect biodiversity and geodiversity, and specific impacts will depend upon the development that comes forward within the Mineral Resource Consultation Areas, it can nevertheless, by its restrictive nature, potentially help in its conservation. These indirect effects could arise as a result of the first part of (b)(i) which requires non-exempt development to be refused (or effectively prevented through needing to retain mineral resources in situ). Although opportunities for enhancement of biodiversity, from minerals restoration and/or the final development, will be similarly restricted, the potential for enhancement does not outweigh the avoidance of risk.                          | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and  | +                            | Although the policy does not seek to protect cultural heritage, architecture and archaeology, and specific impacts will depend upon the development that comes forward within the Mineral Resource Consultation Areas, it can nevertheless, by its restrictive nature, potentially help in its conservation. These indirect effects could arise as a  | No mitigation is considered necessary. |



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| <p>enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>  |           | <p>result of the first part of (b)(i) which requires non-exempt development to be refused (or effectively prevented through needing to retain mineral resources in situ). Although opportunities for enhancement of the historic environment, from minerals restoration and/or the final development, will be similarly restricted, the potential for enhancement does not outweigh the avoidance of risk.</p>  |  |
| <p><b>4: Material assets</b><br/>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>The purpose of the policy is to safeguard minerals reserves and, as such it strongly supports that element of this SA objective. It has no particular effects on the other elements. Part (a), in only requiring the safeguarding of minerals that are of economic value, could potentially put at risk the future extraction of minerals that are not of current economic value, but which could become valuable in the future. This, however, is insufficient to justify a lowering in the overall likely effect.</p>  | <p>Great clarification on the need to protect minerals that may not be of immediate economic value would be beneficial, as would further explanation of the suggested equivalence of the terms "<i>locally and nationally important</i>" and "<i>economically valuable</i>".</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>+</p>  | <p>Although the policy does not seek to protect water and air quality, and specific impacts will depend upon the development that comes forward within the Mineral Resource Consultation Areas, it can nevertheless, by its restrictive nature, potentially help to support this objective. These indirect effects could arise as a result of the first part of (b)(i) which requires non-exempt development to be refused (or effectively prevented through needing to retain mineral resources in situ). This means that development that could compromise water and air quality is</p> | <p>No mitigation is considered necessary.</p>  |

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|  |     | less likely to be acceptable, thereby having a minor positive effect on this SA objective.   |   |
| <p><b>6: Climate Change and energy</b><br/>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 restrictive aspect of this policy could reduce the likelihood of development taking place. Any development process tends to include mechanical excavation, releasing carbon stored in soils, and leading to emissions from construction plant and movement of materials. The materials themselves can have significant embodied energy, including concrete used in footings and other building materials. Operation of the development, too, is likely to have negative impacts on climate change through heating, lighting and other services, unless this is entirely met by renewable energy. While the first bullet point in part (b)(i) of the policy could help to avoid these impacts, the effects of the second bullet point, and of part (b)(ii) could be to require two different types of development on the same land – the extraction of the material, and the construction of the final proposal itself. Both types of development are likely to have negative effects on this SA objective, and so in requiring both to take place the policy could worsen climate change. This depends, however, on whether the extracted minerals would offset the need to extract from elsewhere; if this were the case, then there could actually be a reduction in overall negative effects, as 'economies of scale' could see some vehicle movements, groundworks, etc. 'shared' between the two types of development. Similarly, it cannot be assumed that if development proposed within the consultation area were to be refused, it would not take place in another location that did not contravene this policy, and this alternative location could be better or worse in climate change terms, depending on a whole range of factors.</p> | No mitigation is considered necessary.  |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks</p>                                    | +   | <p>The restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could support this SA objective by reducing the risk of development occurring in flood-prone areas.</p>   | <p>The restrictive aspect of this policy could reduce the likelihood of development taking place.</p> |

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| or contribute to surface water flooding in all other areas.  |     |   |  |
| <b>8: Access to Services</b><br>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment. | ?   | While the restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could reduce the potential for access to services to be compromised, the objective calls for improvements, rather than preservation. Equally, the proposed development could be wholly or partly designed to improve access to services, and the policy could prevent these benefits from being realised. As any predicted here would be overly speculative, the effects on this SA objective remain unknown. | No mitigation is considered necessary. |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the population and reduce inequalities in health.   | 0   | While the restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could reduce the potential for negative effects on health and amenity, the objective calls for improvements, rather than preservation. No effects on this SA objective have been identified.  | No mitigation is considered necessary. |
| <b>10: Waste</b><br>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.   | No mitigation is considered necessary. |
| <b>11: Traffic and transport</b><br>Reduce the need to travel and move   | +/- | The restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could support this SA objective by reducing the opportunity for/need to travel. One potential effect of this, however, is that a location chosen for its accessibility may be refused, and  | No mitigation is considered necessary. |

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| <p>towards more sustainable travel patterns.</p>   |            | <p>the proposed development would have to relocate to a less accessible location that complied with the policy.</p>   |   |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+/-</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. It could also, however, through the restrictive elements of part (b), 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>No mitigation is considered necessary.</p> |
| <p><b>I3: Provision of housing</b><br/>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>+/-</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. It could also, however, through the restrictive elements of part (b), hamper housebuilding and add costs to housing land and development, and increase the time needed to deliver houses ready to market.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>I4: Participation by all</b><br/>Provide opportunities for communities to participate in and contribute to decisions that affect their neighbourhood and quality of life,</p>        | <p>0</p>   | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |

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| <p>encouraging pride and social responsibility in the local community.</p>   |            |   |   |
| <p><b>15: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient technologies and environmental technology initiatives.</p> | <p>+/-</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. Conversely, the restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could reduce the potential for technology, innovation and inward investment. Even where such development does go ahead within a consultation area, it could be delayed and see increased costs as a result of this additional burden.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>16: Population (skills and education)</b><br/>Raise the skills levels and qualifications of the workforce.</p>   | <p>0</p>   | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>17: Population (crime &amp; fear of crime)</b><br/>Reduce crime, fear of crime and antisocial behaviour.</p>   | <p>0</p>   | <p>No effects on this SA objective have been identified.</p>  | <p>No mitigation is considered necessary.</p> |

### Appraisal of policies: Policy MLP 28 Safeguarding Permitted Mineral Sites and Supporting Infrastructure

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation                   |
|--|------------------------------|--|--|
| <b>1: Landscape</b><br>Safeguard and strengthen landscape character and quality and minimise negative visual impact.                               | +                            | Although the policy does not seek to protect the landscape, and specific impacts will depend upon the development that comes forward within the Mineral Infrastructure Consultation Areas, it can nevertheless, by its restrictive nature, potentially help to safeguard landscape character and minimise visual impact. These indirect effects could arise as a result of part (b), which requires non-exempt development to be refused if impacts cannot be satisfactorily mitigated. Although opportunities for enhancement of the landscape arising from the proposed development will be similarly restricted, the potential for enhancement does not outweigh the avoidance of risk. | No mitigation is considered necessary. |
| <b>2: Biodiversity and geodiversity</b><br>Conserve and enhance Worcestershire's biodiversity and geodiversity.                                    | +                            | Although the policy does not seek to protect biodiversity and geodiversity, and specific impacts will depend upon the development that comes forward within the Mineral Infrastructure Consultation Areas, it can nevertheless, by its restrictive nature, potentially help in its conservation. These indirect effects could arise as a result of part (b), which requires non-exempt development to be refused if impacts cannot be satisfactorily mitigated. Although opportunities for enhancement of biodiversity arising from the proposed development will be similarly restricted, the potential for enhancement does not outweigh the avoidance of risk.                          | No mitigation is considered necessary. |
| <b>3: Cultural heritage, architecture and archaeology</b><br>Preserve and enhance the historic environment and deliver well-designed and resource- | +                            | Although the policy does not seek to protect cultural heritage, architecture and archaeology, and specific impacts will depend upon the development that comes forward within the Mineral Infrastructure Consultation Areas, it can nevertheless, by its restrictive nature, potentially help in its conservation. These indirect effects could arise as a result of part (b), which requires non-exempt development to be refused if impacts cannot be satisfactorily mitigated. Although opportunities for enhancement of the historic environment arising from the proposed development will be similarly restricted, the potential for enhancement                                     | No mitigation is considered necessary. |

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| <p>efficient development which respects local character and distinctiveness.</p>  |            | <p>does not outweigh the avoidance of risk.</p>  |   |
| <p><b>4: Material assets</b><br/>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>The purpose of the policy is to safeguard mineral infrastructure, rather than mineral resources. As such, this policy is not relevant to the first part of this SA objective. It could potentially support those parts of the objective that seek to safeguard best and most versatile agricultural land and Green Belt, but this will depend on the location of the particular development proposal. There is a minor risk that the policy could compromise the objective's maximisation of previously-developed land and buildings if the land and buildings were in close proximity to minerals sites and infrastructure.</p>        | <p>No mitigation is considered necessary.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>+</p>   | <p>Although the policy does not seek to protect water and air quality, and specific impacts will depend upon the development that comes forward within the Mineral Infrastructure Consultation Areas, it can nevertheless, by its restrictive nature, potentially help to support this objective. These indirect effects could arise as a result of part (b), which requires non-exempt development to be refused if impacts cannot be satisfactorily mitigated. This means that development that could compromise water and air quality is less likely to be acceptable, thereby having a minor positive effect on this SA objective.</p> | <p>No mitigation is considered necessary.</p> |
| <p><b>6: Climate Change and energy</b></p>  | <p>+/-</p> | <p>The restrictive aspect of this policy could reduce the likelihood of development taking place. Any development process tends to include mechanical excavation, releasing carbon stored in soils, and leading to</p>   | <p>No mitigation is considered necessary.</p> |

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| <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>emissions from construction plant and movement of materials. The materials themselves can have significant embodied energy, including concrete used in footings and other building materials. Operation of the development, too, is likely to have negative impacts on climate change through heating, lighting and other services, unless this is entirely met by renewable energy. It cannot be assumed, however, that if development proposed within the consultation area were to be refused, it would not take place in another location that did not contravene this policy, and this alternative location could be better or worse in climate change terms, depending on a whole range of factors.</p> |   |
| <p><b>7: Flooding</b><br/>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 restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could support this SA objective by reducing the risk of development occurring in flood-prone areas.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>8: Access to Services</b><br/>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>While the restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could reduce the potential for access to services to be compromised, the objective calls for improvements, rather than preservation. Equally, the proposed development could be wholly or partly designed to improve access to services, and the policy could prevent these benefits from being realised. As any predicted here would be overly speculative, the effects on this SA objective remain unknown.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>9: Health and</b></p>   | 0 | <p>While the restrictive aspect of this policy could reduce the likelihood of</p>  | <p>No mitigation is considered necessary.</p> |



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| <p><b>amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>   |     | <p>development taking place and, as such, could reduce the potential for negative effects on health and amenity, the objective calls for improvements, rather than preservation. No effects on this SA objective have been identified.</p>   |   |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>                         | 0   | <p>No effects on this SA objective have been identified.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | +/- | <p>The restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could support this SA objective by reducing the opportunity for/need to travel. One potential effect of this, however, is that a location chosen for its accessibility may be refused, and the proposed development would have to relocate to a less accessible location that complied with the policy.</p>   | <p>No mitigation is considered necessary.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>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 protection of mineral sites and infrastructure, 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 sites and infrastructure, this policy can help to ensure that mineral production is functioning when needed to respond to economic drivers. It could also, however, through the restrictive elements of part (b), hamper non-minerals development that could support Worcestershire's economy and infrastructure. Even where proposed non-exempt development goes ahead within the consultation areas, 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>No mitigation is considered necessary.</p> |

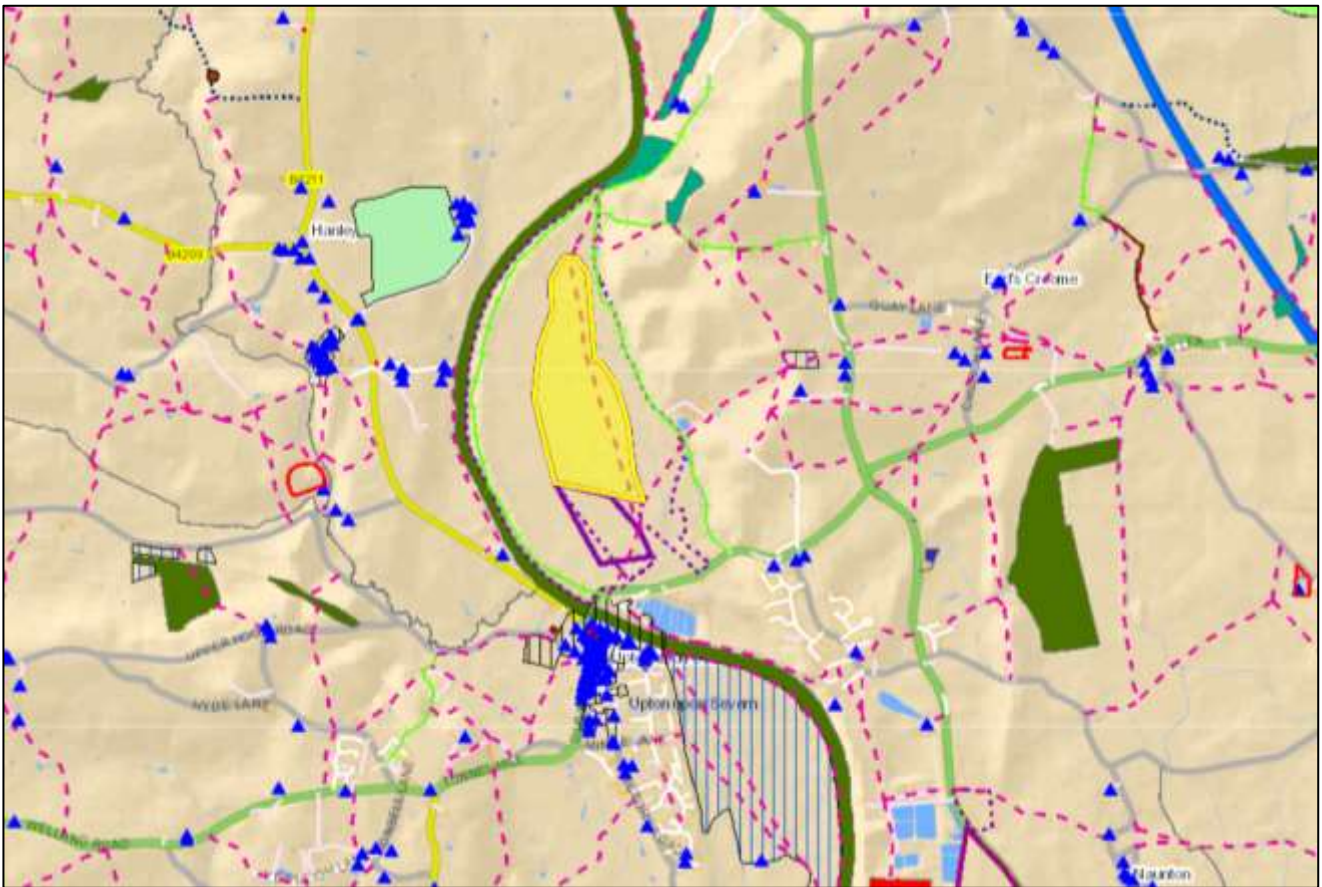
|   |     |   |   |
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| <p><b>I3: Provision of housing</b><br/>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p>  | +/- | <p>The policy supports the protection of minerals sites and infrastructure, thereby supporting the minerals sector in delivering the materials necessary for – among other uses – housebuilding. By safeguarding mineral sites and infrastructure, this policy can help to ensure that minerals are available when needed to respond to the need for housing growth. It could also, however, through the restrictive elements of part (b), hamper housebuilding and add costs to housing land and development, and increase the time needed to deliver houses ready to market.</p>  | <p>No mitigation is considered necessary.</p> |
| <p><b>I4: Participation by all</b><br/>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>No mitigation is considered necessary.</p> |
| <p><b>I5: Technology, innovation and inward investment</b><br/>Promote and support the development of new technologies, of high value and low impact, especially resource efficient</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. Conversely, the restrictive aspect of this policy could reduce the likelihood of development taking place and, as such, could reduce the potential for technology, innovation and inward investment. Even where such development does go ahead within a consultation area, it could be delayed and see increased costs as a result of this additional burden.</p> | <p>No mitigation is considered necessary.</p> |

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| technologies and environmental technology initiatives.   |   |   |  |
| <b>16: Population (skills and education)</b><br>Raise the skills levels and qualifications of the workforce. | 0 | No effects on this SA objective have been identified. | No mitigation is considered necessary. |
| <b>17: Population (crime &amp; fear of crime)</b><br>Reduce crime, fear of crime and antisocial behaviour.   | 0 | No effects on this SA objective have been identified. | No mitigation is considered necessary. |

**(f) Appraisal of specific sites, preferred areas, and reasonable alternatives**

# Site 1: Ryall North

1,400,000t, 34Ha, water access, processing off-site at Ryall House Farm



## Legend

|  |  |
|--|--|
|  | Ryall North                            |
|  | Other minerals sites for consideration |
|  | Scheduled Ancient Monuments            |
|  | Local Geological Sites                 |
|  | Listed Buildings                       |
|  | Public Footpath                        |
|  | Bridleway                              |
|  | Conservation Areas                     |
|  | Sites of Special Scientific Interest   |
|  | Local Wildlife Sites                   |
|  | Parks and Gardens of Local Importance  |
|  | Ancient Semi-Natural Woodland          |
|  | Waste Sites                            |



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls wholly within the 'Riverside Meadows' landscape type and the MWV33.10b Land Cover Parcel.</p> <p>Guidance on the 'Riverside Meadows' landscape type seeks to retain the unity of the linear form of these landscapes; to conserve all existing areas of permanent pasture; to seek opportunities to encourage the conversion of arable land back to arable; to conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; to conserve existing wetland habitats and seek opportunities for further wetland habitat creation; to avoid building or road construction works; to avoid further drainage of waterside meadows; and to explore opportunities to return to patterns and processes of natural flooding cycles where feasible.</p> <p>It will not be possible to satisfy all of these guidelines during extraction operations. As examples, any existing areas of permanent pasture may be lost (albeit temporarily), and it is likely that some internal road construction works will be required. As such, a negative impact on the landscape can be predicted in the short to medium term.</p> <p>The site may be visible from the Malvern Hills AONB, the boundary of which is about 4.8km to the west at its closest point. Certain locations within the AONB enjoy views east towards Bredon Hill and, as such, could potentially be affected by minerals extraction here. It may also be visible from higher ground in the Cotswolds AONB. Given the distances involved, however, any impact is not considered to be significant.</p> <p>The Park - Hanley Castle is an unregistered historic park and garden of local importance to the north-west of the site, just over the River</p> | <p>During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors.</p> <p>The landscape guidelines for the Riverside Meadows landscape type should help to inform the restoration of the site as part of a green infrastructure approach.</p> |

| Sustainability Appraisal Objectives | SA rating without mitigation | Potential effects   | Potential mitigation |
|-------------------------------------|------------------------------|---|----------------------|
|                                     |                              | <p>Severn, some 430m away at its closest point. Croome Court nationally registered park and garden is some 1.8km to the north east at its closest point. Although the site will be visible from parts of the local garden, the impacts are not considered likely to significantly affect it, and will be short-medium term in duration. The site is unlikely to be visible from lower-lying parts of Croome Court, and is sufficiently distant as to be unlikely to produce significant negative impacts.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by other sensitive receptors, including householders, road traffic, those using rights of way, and river users. There are no significant residential developments adjoining the site, and its location within floodzones 2 and 3 suggest that future incompatibility with housing is unlikely. The nearest settlements are Hanley Castle (the outlying development of which is just over 400m to the west of the site across the Severn), Holly Green, some 600m to the south-east, and Upton upon Severn (the closest part of which is a caravan site, over 300m to the south). There are also a handful of more isolated farms and dwellings within 500m or so of the site boundary, on both the east and west side of the Severn. Some degree of negative impact on these receptors is likely to be experienced in the short-medium term, as the site changes from its current grassland setting.</p> <p>Cumulative landscape impacts could arise if this site were to be developed in parallel with either 'Ryall Court Farm' or 'Land south of Ryall north', both of which would extend the visual impact to the south. Any combination of these would still occupy a smaller area than 'Land at Ryall north', which is likely to have the widest landscape impact due</p> |                      |

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation   |
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|  |                              | to its large land area.  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>                     Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | 0                            | <p>There are two SSSIs within 1.5km of the site boundary, both designated for their biological interest: Upton Ham, some 750m to the south; and Earl's Croome Meadow, some 850m to the east.</p> <p>Local Wildlife Sites within 1.5km are the river Severn (the whole of which is an LWS within Worcestershire) which is an Open Water – flowing LWS, 300m to the west; Pool &amp; Mere Brooks, an Open Water – flowing LWS 500m to the south-west; and Brotheridge Green Disused Railway, a Broadleaved Woodland Grassland LWS within 1,150m to the south-west. All except the River Severn are fairly well separated from the site by distance and by intervening roads and built development. As such, no significant adverse impacts are likely to arise, although careful consideration will be needed to ensure the river Severn is not adversely affected. The potential for cumulative impacts on the Severn could arise if either 'Ryall Court Farm' or 'Land south of Ryall north' were developed at the same times, as this would extend the length of the Severn which was faced by minerals development. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of</p> | <p>Careful consideration should be given to ensuring the river Severn LWS is not adversely affected.</p> |



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
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|  |                              | <p>cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>Three areas of ancient semi-natural woodland are found to the north of the site. At their closest points they are, respectively: Part of Cliff Wood (325m away); Barnes's Rough (450m away); and Severn Bank Wood (760m away). As these areas are all well beyond the site boundaries, direct removal of trees is unlikely. There is the potential for negative impacts to arise as result of dust (especially as the prevailing wind direction, from the south-east, would broadly take in all three ASNW) and changes to drainage, but this is considered unlikely given the distances involved.</p> <p>Given the distances from the various designated receptors, it is considered unlikely that significant negative effects will be experienced as a result of site development, although the scale of the site and its proximity to the river Severn needs to be especially carefully considered to avoid adverse impacts.</p> |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed</p> | -                            | <p>There are no scheduled ancient monuments within or in close proximity to the site, but there are four within 1.5km of the site boundary. Two are within Upton upon Severn to the south ('Tower of old church', 660m away, and 'Upton cross in old churchyard', 670m away). The 'Boundary cross at entrance to Quay Lane' is some 750m to the west, and the 'Ringwork known as Hanley Castle 520m south of the Church of St. Mary' is about 1050m to the west. Given the distances involved, and the screening provided by the intervening natural and built</p>  | <p>Appropriate processes and safeguards should be employed. Direct effects on the palaeochannels resulting from extraction can be managed through standard archaeological best practice. Degredation through de-watering remains a risk.</p> |

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation |
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| <p>and resource-efficient development which respects local character and distinctiveness.</p> |                              | <p>environment, no significant impacts are likely to arise on these SAMs as a result of minerals extraction at this site.</p> <p>There are a great many listed buildings within 1.5km of the site boundary, due in part to the nearby historic settlements of Upton upon Severn and Hanley Castle. Most of these buildings are listed at Grade II, but a handful are Grade II*. No Grade I listed buildings have been identified within 1.5km of the site.</p> <p>The closest listed building on the same side of the Severn as the site is the Grade II 'Holly Green Cottage and Tudor Cottage' some 690m to the south-east. The impact on any listed building will depend on the relationship between the site and the listed building and its setting. Given the distances involved, and the screening provided by the intervening natural and built environment, significant impacts on any listed buildings are considered unlikely to arise.</p> <p>The Upton upon Severn Conservation Area covers most of the historic core of Upton, and starts some 475m to the south of the site. Although most of the Conservation Area is south of the Severn, part of it extends to the north. The Hanley Castle Conservation Area is much smaller, and is approximately 925m west of the site. Given the distances involved, significant impacts on either Conservation Area are considered unlikely to arise. The potential for cumulative impacts on the Upton Conservation Area – as well as on listed buildings to the east of the site - could arise if either 'Ryall Court Farm' or 'Land south of Ryall north' were developed at the same time. The scale of any impacts arising from this is unclear at this stage.</p> |                      |

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects  | Potential mitigation   |
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|   |                              | This area is associated with former palaeochannels of the River Severn that date from the early prehistoric periods and remained functional into the Romano-British period. However, effects resulting from possible de-watering, and therefore degradation, of in-situ organic deposits in the setting of the site are a material risk.   |  |
| <b>4: Material assets</b><br>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. | - / ?                        | Some best and most versatile agricultural land may be lost to minerals extraction, at least in the short-medium term. Roughly the southern half of the site (excluding a sliver of land to the east) is grade 4 agricultural land (around 51% of the total site area), with the northern half grade 3. More detailed mapping, to show whether this is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land (BMV). In the absence of more accurate data, a precautionary approach has been taken, and it has been assumed that some loss of best and most versatile land would occur.<br>No part of the site is within the Green Belt.<br>Upton upon Severn village green is approximately 830m to the south of the site.<br>The site is not previously-developed land. | Where possible, soil sampling should guide development to avoid BMV agricultural land if this is present. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.<br><br>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere. |
| <b>5: Natural Resources</b><br>Protect and enhance water and air quality.   | - / ?                        | <b>Water quality</b><br>The site is not within or close to any Source Protection Zone (SPZ). The nearest SPZ in Worcestershire is some 7.5km to the west.<br><br><b>Air quality</b><br>The site is not within or close to any AQMA.  | Measures to ensure the protection of water quality, including through discharges into the river Severn, should be in place.<br><br>Measures to protect air quality and reduce air pollution should be taken.   |

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
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|  |                              | Any air or water pollution could be worsened through cumulative impacts if this site were to be developed in parallel with either 'Ryall Court Farm' or 'Land south of Ryall north'.  |  |
| <p><b>6: Climate Change and energy</b><br/>                     Reduce causes of and adapt to the impacts of climate change.<br/>                     Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p> | -/?                          | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. The climate change impacts of movement to processing plant(s) will depend on whether this is on-site or elsewhere, and on the methods used; indications are that processing will be off-site at Ryall House Farm. River transport or conveyors are likely to offer climate change benefits over vehicle movements when moving excavated material to/from the processing plant. Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The nearest built-up area to the site is Upton upon Severn, but this is not a large town. It is also close to the M5 motorway, which would provide access to other markets.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration, but the extractive industry is carbon-intensive and such opportunities are not considered likely to account for a large proportion of the energy use. Although the site is very close to the river Severn, research into viable energy generation from this source (IT Power, Renewable Energy Study 2008)</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects   | Potential mitigation   |
|---|------------------------------|---|--|
|   |                              | did not suggest there was potential in this location.   |  |
| <p><b>7: Flooding</b><br/>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 entirety of the site falls within flood zones 2 and 3, as it is part of the floodplain of the river Severn. There are also areas of surface water flooding within the site for 1 in 30, 1 in 100, and 1 in 1000 events.</p> <p>In a planning sense, sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended and, as such, the presence of Flood Zone 3 will attract a minor negative rating. Buildings and processing should ideally not be in the floodzone. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere. In the short to medium term, the site's ability to act as flood storage may be compromised by the need to ensure a workable site. This may be a relatively minor impact, but may still be felt until site restoration, which is likely to restore the site's flood-plain function.</p> | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational</p>                    | -                            | <p>Footpath 501 runs through the proposed site, and is therefore likely to be affected, even if only through a temporary diversion (or, if not diverted, a change in the characteristics of its setting which may be welcome to some users but unwelcome to others). The site boundary also comes very close to footpath 508 in the south-eastern corner, and bridleway 547 to the north and east.</p> <p>Some degree of temporary or permanent closure or diversion of one or more of these may be required, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach.</p> |

| Sustainability Appraisal Objectives   | SA rating without mitigation | Potential effects  | Potential mitigation   |
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| attainment.   |                              | <p>potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely. The precautionary principle has been applied here in a reaching a judgement of a minor negative rating.</p> <p>Cumulative impacts could arise on footpath 508 if this site were to be developed in parallel with either 'Ryall Court Farm' or 'Land south of Ryall north'.</p> <p>No other services have been identified that could be compromised by development in this location.</p>  |  |
| <p><b>9: Health and amenity</b><br/>                     Improve the health and well-being of the population and reduce inequalities in health.</p> | 0                            | <p>The site is fairly isolated from residential development, with a solitary dwelling some 100m to the north west, and a farm 250m to the east. The solitary dwelling is reasonably well screened by existing trees, although some noise disturbance could potentially occur. Agricultural operations at the farm, which includes a slurry pit, could give rise to various forms of noise, dust and odour pollution which could reduce any relative impacts arising from minerals extraction at the site. There is an existing sewage works within 300m of the east of the site boundary which may suggest a degree of odour is already present on occasion, within and downwind of this area.</p> <p>More significant amenity impacts could be felt if this site were to be developed alongside either 'Ryall Court Farm' or 'Land south of Ryall north', but this would be unlikely to be significant, as these sites are both further away from these receptors than any part of Ryall North.</p> <p>No major cables, lines, gas pipes or pipelines pass through or near to</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site.</p> |

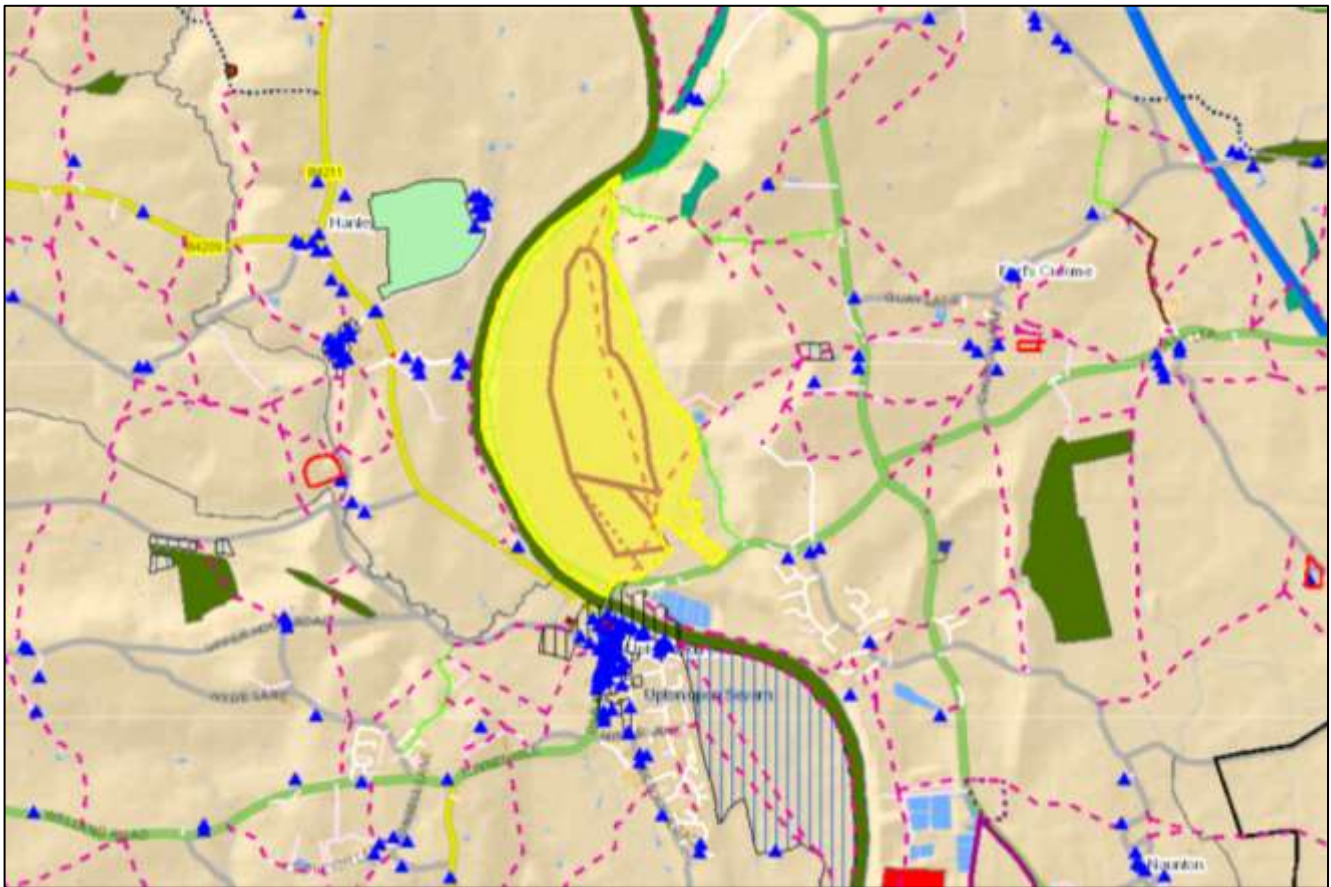
| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
|  |                              | the site. An electricity transmission line is just outside the site, broadly following the line of the southern boundary.   |   |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal. | 0                            | The proposed site boundary is not within or close to any waste site or its 250m buffer zone. The closest waste site is the Upton upon Severn household recycling centre, approximately 680m to the south. No impacts on wastes site are expected to occur.<br><br>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.   | Aside from standard site waste management practices in accordance with local and national policy, the need for any mitigation in relation to this SA objective has not been identified. |
| <b>11: Traffic and transport</b><br>Reduce the need to travel and move towards more sustainable travel patterns.                                     | -                            | The site boundary extends to the river bank of the Severn, and would use river transport to move the extracted minerals to the processing plant at Ryall House Farm. It is unclear whether extracted material will be moved to the river by vehicles or by conveyors. River transport is generally a more sustainable method than using heavy goods vehicles. However, whilst there may be potential for onward movements of material from the processing plant, that is not currently done on the river Severn. Onward movement of the processed material is therefore likely to be on the road network, using diesel lorries. The site is close to the A38, which is an advisory route for lorries, and is reasonably close to the M5. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative traffic impacts could arise if this site were to be developed in parallel with either 'Ryall Court Farm' or 'Land south of Ryall north', as each of these sites would be likely to use the same road network.<br><br>The closest bus stops are either side of the river Severn, well within | Transport movements by sustainable means, including conveyors and river transport, should be maximised where possible.  |

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
|  |                              | 800m of the site boundary. The routes serve Worcester and (from the west of the Severn) also Malvern and Tewkesbury. The site is a walkable distance from the centre of Upton-upon-Severn, which, as a town, is likely to continue to be well-served by buses even if some routes/bus stop locations are changed. There is no railway station in close proximity.  |   |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | +                            | The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage. | The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy. |
| <p><b>I3: Provision of housing</b><br/>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 site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.  | The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.                          |












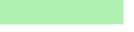



# Site 2: Land at Ryall North

1,400,000t, 126Ha, water access, processing off-site at Ryall House Farm



## Legend

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|  | <b>Ryall North</b>                            |
|  | <b>Other minerals sites for consideration</b> |
|  | <b>Scheduled Ancient Monuments</b>            |
|  | <b>Local Geological Sites</b>                 |
|  | <b>Listed Buildings</b>                       |
|  | <b>Public Footpath</b>                        |
|  | <b>Bridleway</b>                              |
|  | <b>Conservation Areas</b>                     |
|  | <b>Sites of Special Scientific Interest</b>   |
|  | <b>Local Wildlife Sites</b>                   |
|  | <b>Parks and Gardens of Local Importance</b>  |
|  | <b>Ancient Semi-Natural Woodland</b>          |
|  | <b>Waste Sites</b>                            |



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls wholly within the 'Riverside Meadows' landscape type and the MW33.10b Land Cover Parcel.</p> <p>Guidance on the 'Riverside Meadows' landscape type seeks to retain the unity of the linear form of these landscapes; to conserve all existing areas of permanent pasture; to seek opportunities to encourage the conversion of arable land back to arable; to conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; to conserve existing wetland habitats and seek opportunities for further wetland habitat creation; to avoid building or road construction works; to avoid further drainage of waterside meadows; and to explore opportunities to return to patterns and processes of natural flooding cycles where feasible.</p> <p>It will not be possible to satisfy all of these guidelines during extraction operations. As examples, any existing areas of permanent pasture may be lost (albeit temporarily), and it is likely that some internal road construction works will be required. As such, a negative impact on the landscape can be predicted in the short to medium term.</p> <p>The site would be visible from the Malvern Hills AONB, the boundary of which is within about 4.5km at its closest point. Certain locations within the AONB enjoy clear views east towards Bredon Hill and, as such, could potentially be affected by minerals extraction here. It may also be visible from higher ground in the Cotswolds AONB. Given the distances involved, however, any impact is not considered to be significant.</p> <p>The Park - Hanley Castle is an unregistered historic park and garden of local importance to the north-west of the site, just over the River Severn, some 210m away at its closest point. Croome Court nationally registered park and garden is some 1.8km to the north east at its closest</p> | <p>During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors.</p> <p>The landscape guidelines for the Riverside Meadows landscape type should help to inform the restoration of the site as part of a green infrastructure approach.</p> |

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|   |          | <p>point. Although the site will be visible from parts of the local garden, the impacts are not considered likely to significantly affect it, and will be short-medium term in duration. The local garden is also well-screened by existing trees at its closest point to the site (although there are extensive viewpoints that will enjoy clear inter-visibility). The site is unlikely to be visible from lower-lying parts of Croome Court, and is sufficiently distant as to be unlikely to produce significant negative impacts.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using rights of way, and river users. There are no significant residential developments adjoining the site, and its location within floodzones 2 and 3 suggest that future incompatibility with housing is unlikely. The nearest settlements are Hanley Castle (the outlying development of which is about 100m to the west of the site across the Severn), Holly Green, some 225m to the south-east, and Upton upon Severn (the closest part of which is a caravan site which abuts the site to the south). There are also a group of more isolated farms and dwellings within 500m or so of the site boundary, on both the east and west side of the Severn. Some degree of negative impact on these receptors is likely to be experienced in the short-medium term, as the site changes from its current grassland setting.</p> |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are three SSSIs within 1.5km of the site boundary, all designated for their biological interest: Upton Ham, some 380m to the south; and Earl's Croome Meadow, some 690m to the east, and three parts of Brotheridge Green Meadows, which begin around 1,350m away to the west.</p> <p>Local Wildlife Sites within 1.5km are the river Severn Open Water - flowing LWS which immediately adjoins the north, west and south of the site; Brotheridge Green Disused Railway Broadleaved Woodland Grassland LWS within around 830m to the south-west; Brotheridge Green Meadows &amp; Boynes Coppice Broadleaved Woodland Grassland LWS 1,400m to the south-west; and Smithmoor Common &amp; Meadows Grassland Marshland LWS 1,425m to the east.</p>  | <p>Careful consideration should be given to ensuring the river Severn LWS is not adversely affected.</p> |

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|   |          | <p>All except the River Severn are fairly well separated from the site by distance and by intervening roads and built development. As such, no significant adverse impacts are likely to arise, although careful consideration will be needed to ensure the river Severn is not adversely affected.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>Three areas of ancient semi-natural woodland are found to the north of the site. At their closest points they are, respectively: Part of Cliff Wood (which abuts the northern tip of the site); Barnes's Rough (325m away); and Severn Bank Wood (400m away). As these areas are all well beyond the site boundaries, direct removal of trees is unlikely. There is the potential for negative impacts to arise as result of dust (especially as the prevailing wind direction, from the south-east, would broadly take in all three ASNW) and changes to drainage, but this is considered unlikely given the distances involved.</p> <p>Given the distances from the various designated receptors, it is considered unlikely that significant negative effects will be experienced as a result of site development, although the scale of the site and its proximity to the river Severn needs to be especially carefully considered to avoid adverse impacts.</p> |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which</p> | <p>-</p> | <p>There are no scheduled ancient monuments within or in close proximity to the site, but there are six within 1.5km of the site boundary. Two are within Upton upon Severn to the south ('Tower of old church', 125m away, and 'Upton cross in old churchyard', 150m away). The 'Boundary cross at entrance to Quay Lane' is some 440m to the west, and the 'Ringwork known as Hanley Castle 520m south of the Church of St. Mary' is about 700m to the west, the 'Churchyard cross in St Denys's churchyard' is 1,240m to the north, and the 'Boundary cross 50m NW of Northend Cottage' is 1,460m to the north-west. Given the distances involved, and the screening provided by the intervening natural and built environment, no significant impacts are likely to arise on most of these</p>  | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the tower of the old church, the Pool House, and any other listed buildings on either side of the river which could be affected. Consideration should be given to limiting any activities that could compromise the setting of the northern</p> |

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| <p>respects local character and distinctiveness.</p> |  | <p>SAMs as a result of minerals extraction at this site. For the tower of the old church, however, a negative impact is possible, given that its setting is so close to the river and the fact that the site boundary extends right to the water's edge. The site would be visible from higher parts of the tower and, although the busy modern bridge would detract from its setting to a degree, it is nevertheless possible for negative impacts to arise from minerals operations in this location.</p> <p>There are a great many listed buildings within 1.5km of the site boundary, due in part to the nearby historic settlements of Upton upon Severn and Hanley Castle. Most of these buildings are listed at Grade II, but a handful are Grade II*. No Grade I listed buildings have been identified within 1.5km of the site.</p> <p>The closest listed building on the same side of the Severn as the site is the Grade II 'Holy Green Cottage and Tudor Cottage' some 300m to the east, forming a small group with the grade II listed 'Sunnybank Cottage' and 'Holly Green Farmhouse' a little further away.</p> <p>The impact on any listed building will depend on the relationship between the site and the listed building and its setting. Whilst the majority of buildings may not be directly impacted, The Pool House, which sits on the western bank of the Severn, is less than 90m away, and its setting would clearly be affected by a major change to what is currently an undeveloped riverside setting on the east bank. Those listed buildings in Upton itself that are closest to the river could also be negatively affected, although they are the other side of the bridge, which would act as a barrier of sorts to some of these impacts.</p> <p>The Upton upon Severn Conservation Area covers most of the historic core of Upton, and abuts the site boundary at its southern-most point on Upton Bridge. The Hanley Castle Conservation Area is much smaller, and begins approximately 610m west of the site. Given the distances involved, significant impacts on either Conservation Area are considered unlikely to arise.</p> <p>This area is associated with former palaeochannels of the River Severn</p> | <p>bank of the river Severn by adopting an appropriate buffer zone.</p> <p>For the archaeology, appropriate processes and safeguards should be employed. Direct effects on the palaeochannels resulting from extraction can be managed through standard archaeological best practice. Degredation through de-watering remains a risk.</p> |
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|   |            | <p>that date from the early prehistoric periods and remained functional into the Romano-British period. However, effects resulting from possible de-watering, and therefore degradation, of in-situ organic deposits in the setting of the site are a material risk.</p>  |  |
| <p><b>4: Material assets</b><br/>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>Just under a third of the site, in its central southern area, is grade 4, with the majority being grade 3. More detailed mapping, to show whether this is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land (BMV). In the absence of more accurate data, a precautionary approach has been taken, and it has been assumed that some loss of best and most versatile land would occur.</p> <p>No part of the site is within the Green Belt.<br/>Upton upon Severn village green is approximately 300m to the south of the site.</p>                  | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land, if this is present. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-/?</p> | <p><b>Water quality</b><br/>The site is not within or close to any Source Protection Zone (SPZ). The nearest SPZ in Worcestershire is some 7.3km to the west.<br/>The site's position immediately alongside the river Severn means that there may be potential for deterioration in water quality if polluted run-off was to make it into the river. The Environment Agency maintained two sampling points on the Severn in close proximity to the site boundary, known as 'Pool Brook Upton On Severn' and 'R Severn Upton On Severn', although it appears that monitoring stopped at these sites in 2015 and 2007, respectively.</p> <p><b>Air quality</b><br/>The site is not within or close to any AQMA.</p> | <p>Measures to ensure the protection of water quality, including through discharges into the river Severn, should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken.</p>  |



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| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. The climate change impacts of movement to processing plant(s) will depend on whether this is on-site or elsewhere, and on the methods used; indications are that processing will be off-site at Ryall House Farm. River transport or conveyors are likely to offer climate change benefits over vehicle movements when moving excavated material to/from the processing plant. Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The nearest built-up area to the site is Upton upon Severn, but this is not a large town. It is also close to the M5 motorway, which would provide access to other markets.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration. Although the site is very close to the river Severn, research into viable energy generation from this source (IT Power, Renewable Energy Study 2008) did not suggest the location as having potential.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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 entirety of the site falls within flood zones 2 and 3, as it is part of the floodplain of the river Severn. There are also areas of surface water flooding within the site for 1 in 30, 1 in 100, and 1 in 1000 events.</p> <p>In a planning sense, sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended and, as such, the presence of Flood Zone 3 will attract a minor negative rating. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere. In the short to medium term, the site's ability to act as</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

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| <p>areas.</p>   |   | <p>flood storage may be compromised by the need to ensure a workable site. This may be a relatively minor impact, but may still be felt until site restoration, which is likely to restore the site's flood-plain function.</p>   |  |
| <p><b>8: Access to Services</b><br/>                 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>Footpaths 594, 519 and 501 form a continuous line running roughly north to south through almost the entire length of the site.<br/>                 Footpaths 511 and 508 form a continuous line that runs roughly south-west to north-east through the southern-most part of the site.<br/>                 Bridleway 508 roughly follows the river Severn and as such, runs just within the site along the full length of the site's western boundary.<br/>                 Bridleway 506 follows much of the site's eastern boundary.<br/>                 There are also a range of other bridleways and footpaths either running from the site boundary or in close proximity to the site.<br/>                 Some degree of temporary or permanent closure or diversion is likely to be required, at least for those rights of way within the site, although this will depend on the circumstances and cannot be modelled at this stage.<br/>                 The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p> | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach.</p>   |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | 0 | <p>The site is fairly isolated from residential development, with a solitary dwelling within 25m to the north west, and a farm 70m to the east. Although there is some tree cover to screen the solitary dwelling, this is not unbroken, and the proximity of the site boundary could give rise to negative noise and amenity impacts if not carefully managed. Agricultural operations at the farm, which includes a slurry pit, could give rise to various forms of noise, dust and odour pollution. There is an existing sewage works within 100m of the east of the site boundary which may suggest a degree of odour is already present on occasion, within and downwind of this area.</p> <p>No major cables, lines, gas pipes or pipelines pass through or near to the site. An electricity transmission line passes roughly west to east through</p>  | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties.</p> |

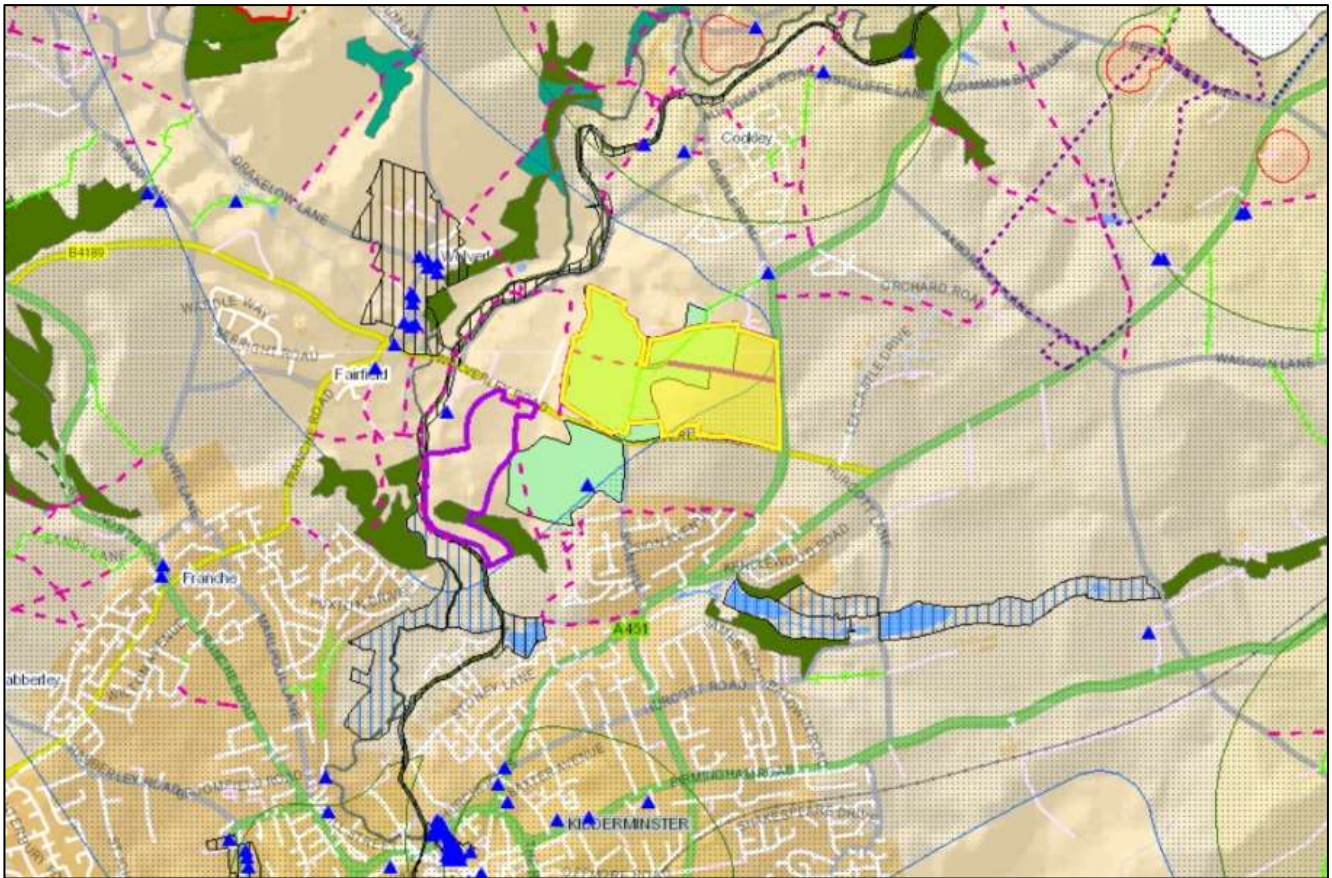


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|  |   | the southern part of the site.   |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>The proposed site boundary is not within or close to any waste site or its 250m buffer zone. The Upton upon Severn household recycling centre is approximately 190m to the south.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>The site boundary extends to the river bank of the Severn, and would use river transport to move the extracted minerals to the processing plant at Ryall House Farm. It is unclear whether extracted material will be moved to the river by vehicles or by conveyors. River transport is generally a more sustainable method than using heavy goods vehicles. However, whilst there may be potential for onward movements of material from the processing plant, that is not currently done on the river Severn. Onward movement of the processed material is therefore likely to be on the road network, using diesel lorries. The site is close to the A38, which is an advisory route for lorries, and is reasonably close to the M5. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>The nearest bus stops are either side of the river Severn. The closest bus stop is within 200m of the site boundary. The routes serve Worcester and (from the west of the Severn) also Malvern and Tewkesbury. The site is a walkable distance from the centre of Upton-upon-Severn, which, as a town, is likely to continue to be well-served by buses even if some routes/bus stop locations are changed. There is no railway station in close proximity.</p> | <p>Transport movements by sustainable means, including conveyors and river transport, should be maximised where possible.</p>  |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven</p>  | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                         |

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| <p>economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>  |          | <p>non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   |   |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

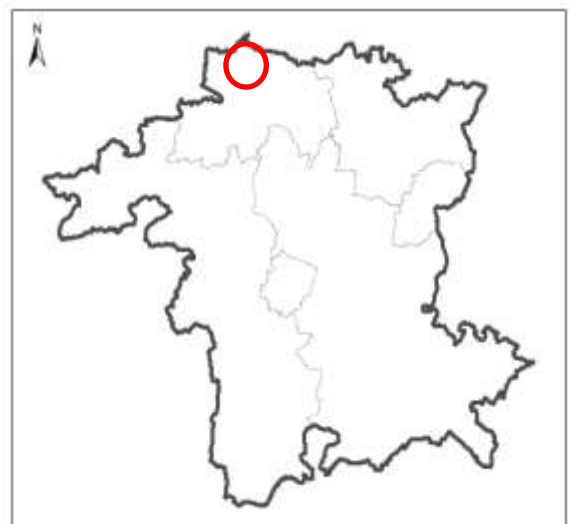
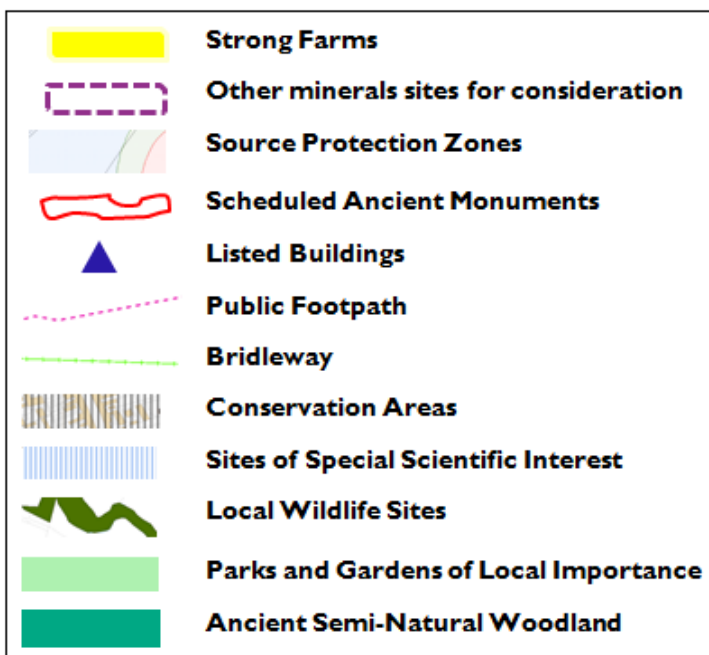
# Site 3: Strong Farms

Tonnage unknown, 51Ha, access unknown, processing unknown



To aid clarity, Green Belt is not shown. The entire site is within the Green Belt.

## Legend



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | <p>--</p>                    | <p>This site falls wholly within the 'Sandstone Estatelands' landscape type and the KS22.1a Land Cover Parcel.</p> <p>Guidance on the Sandstone Estatelands landscape type seeks to: conserve and restore the distinctive hedgerow pattern with priority given to primary hedgerows; identify opportunities for further large scale planting of woodlands and tree belts to strengthen the regular patterns of the landscape; conserve and restore parklands; conserve and enhance tree cover along watercourses; conserve the integrity of estate villages; promote the creation and appropriate management of natural vegetation communities along highways and other non-farmed areas; and promote the development of wide field margins for wildlife benefit.</p> <p>It will not be possible to satisfy all of these guidelines during extraction operations. As an example, it is unlikely that large-scale planting of woodland and tree belt will occur during extraction (although this could take place as part of site restoration). As such, a negative impact on the landscape can be predicted in the short to medium term.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site alongside the nearby 'Land South of Wolverley Road' and/or - to a lesser extent - 'Wolverley Glebe'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty.</p> <p>'Sionhill House (part)' unregistered historic park and garden of local importance extends north and south of the Wolverly Road, and covers</p> | <p>During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors.</p> <p>The landscape guidelines for the Riverside Meadows landscape type should help to inform the restoration of the site as part of a green infrastructure approach.</p> |

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|   |          | <p>around 59% of the site area. Minerals extraction here would almost certainly compromise this asset in the short to medium term, and potentially in the longer term, too, as it is unlikely that all those qualities which made the park and garden special could be restored to their original appearance, especially if there are additional green infrastructure requirements of the restoration that do not accord with the locally-important landscape. As such, a significant negative impact has been recorded against this SA objective.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way (a bridleway and footpath currently run through the site, and a further footpath runs alongside the western boundary).</p> <p>The groups of buildings along Wolverley Road and Brown Westhead Park may enjoy some degree of screening from the site by the road itself and by the existing tree belts. The housing development at Broadwaters, representing the northern extent of the built-up area of Kidderminster, is within 350m of the site boundary at its closest. Depending on topography and other factors, residents in the southern part of Cookley may also experience visual impact. There are numerous individual or small clusters of dwellings, farms, and other buildings in close proximity to the site.</p> |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>The site is not within or close to any SSSI. Although the 'Hurcott &amp; Podmore Pools' and 'Hurcott Pasture' SSSIs are within 700m of the site's southern boundary at their closest, they are physical divided by the Broadwaters housing estate and by two main roads, which suggests the impact on the SSSIs is unlikely to be significant. Similarly, the potential for impacts on the 'Stourvale Marsh' SSSI, some 750m to the south-west, will be reduced because of intervening woodland. The 'Puxton Marshes' SSSI lies just beyond Stourvale Marsh, at some 960m distance. All of these SSSI are designated for their biological interest. The entirety of the site falls within SSSI impact risk zones.</p> <p>There are no Local Wildlife Sites (LWS) within the site, but several in</p>   | <p>Careful consideration should be given to ensuring that the Staffordshire and Worcestershire canal and the river Stour are not adversely affected.</p> |

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|  |  | <p>close proximity. The 'Staffordshire and Worcestershire Canal' Open Water - flowing LWS is within 100m of the site's north-western boundary, with the River Stour Open Water - flowing LWS only just beyond this, a similar distance away. Other LWS within 1.5km are:</p> <p>To the west, 'Gloucester Coppice' Grassland Broadleaved Woodland 290m away, and Wolverley Marsh Marshland Mire Swamp 580m away; to the south-west, 'Wolverley Court Lock Carr' Broadleaved Woodland Wet Woodland Marshland Swamp is 590m away, and 'Puxton Marsh' Marshland Swamp Broadleaved Woodland Grassland is 750m away; 'Hurcott &amp; Podmore Pools (Pastures)' Grassland Broadleaved Woodland Wet Woodland is 640m south; and to the north-east are 'The Island Pool' Open Water Swamp Marshland Wet Woodland Broadleaved Woodland, 1,290m away, and 'Caunsall Marsh' Marshland Wet Woodland Grassland, which is 1,390m away.</p> <p>Most of these LWS, except for the canal and the river, are fairly well separated from the site by distance and by intervening development or other buffers. As such, no significant adverse impacts are likely to arise, although careful consideration will be needed to ensure the watercourses are not adversely affected. Most of these LWS involve marshland or wet woodland, meaning that it is crucial that the site does not adversely affect drainage and flow in the local area. The proximity of the canal and river may increase the likelihood of significant negative impacts, but there is no evidence that carefully-planned development would necessarily lead to negative impacts. There may be some cumulative impacts as a result of development at the nearby 'Land South of Wolverley Road', with the most obvious receptor being the river Severn, given both sites' proximity to this LWS. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive</p> |  |
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|  |          | <p>'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>Three areas of ancient semi-natural woodland are within 1.5km of the site boundary. These are Gloucester Coppice, 270m north-west; an unnamed area on the north side of Cookley, some 1,030m north; and part of Solcum Coppice, 1,270m north-west. It is considered that these are all sufficiently well separated from the site as to be unlikely to experience significant negative impacts.</p> <p>There is the potential for negative impacts to arise as result of dust and changes to drainage, but this is considered unlikely given the distances involved.</p> <p>Given the distances from the various designated receptors, it is considered unlikely that significant negative effects will be experienced as a result of site development, although the scale of the site and its proximity to the Staffordshire and Worcestershire canal river Stour needs to be especially carefully considered to avoid adverse impacts.</p> |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which</p> | <p>-</p> | <p>There are no scheduled ancient monuments within the site or within 1.5km of the site boundary.</p> <p>There are no listed buildings within or immediately adjacent to the site. Within 1.5km of the site boundary, there are 21 listed buildings, with 13 of these clustered in the settlement of Wolverley. Most of the buildings are listed as Grade II, but there are three Grade II* listed buildings in Wolverley ('Wolverley House'; 'Oak House, the Court House and the Old School House'; and 'Church of St John the Baptist'), all of which are around 770m-790m west of the site. The closest listed buildings to the site are the 'North lodges and gateway of Lea Castle', around 270m to</p>   | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the North lodges and gateway of Lea Castle. Consideration should be given to limiting any activities that could compromise this asset's setting by adopting screening and/or an appropriate buffer zone.</p> |

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| <p>respects local character and distinctiveness.</p>   |           | <p>the north, and 'Sion Hill House', around 290m to the south. The setting of any of these listed buildings may extend closer to the site than the distances given. The impact on any listed building will depend on the relationship between the site and the listed building and its setting. Whilst Sion Hill House is reasonably well screened by established trees and roads, the 'North Lodges...' are only partially screened and may be more susceptible to negative impacts. Cumulative impacts could also arise if the nearby 'Land South of Wolverley Road' site were to be developed at the same time. Sion Hill House may be particularly sensitive to such cumulative impacts, as it is roughly equidistant from each site.</p> <p>The site is not within or immediately adjacent to a Conservation Area, although the Staffordshire and Worcestershire Canal Conservation Area passes within 80m of the site at its closest point, in the north-west corner. Wolverley Conservation Area begins some 580m to the west, beyond the canal.</p> <p>Given the distance involved (in the case of Wolverley) and the screening already in place (in both cases), significant impacts on either Conservation Area are considered unlikely to arise. As the nearby site of 'Land South of Wolverley Road' is also close to the canal, cumulative impacts may also arise. Although these are not considered likely to be significant, this cannot be known for certain at this stage.</p> |   |
| <p><b>4: Material assets</b><br/>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</p> | <p>--</p> | <p>GIS mapping suggests the entire site falls within grade 3 agricultural land. Worcestershire County Council's Deliverability Assessment, however, carried out as part of MLP preparation, suggests that "ADAS &amp; Defra post 1988 data indicates that the site contains large areas of Grade 2, and 3a agricultural land, with only a small amount of grade 3b present". This means that some best and most versatile agricultural land would almost certainly be lost, at least in the short-medium term. As such, a significant negative impact has been recorded against this ASA objective.</p> <p>The site is wholly within the Green Belt. Whilst mineral extraction is not an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need</p> |



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| <p>vacant buildings, whilst safeguarding open space/green infrastructure.</p>                       |  | <p>including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p> <p>There are no village greens within or in close proximity of the site.</p>   | <p>to demonstrate very special circumstances.</p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>                   |  | <p><b>Water quality</b><br/>The south-eastern corner of the site, approximately one quarter by area, falls within Source Protection Zone 3. There is the potential for negative cumulative impacts on the SPZ, as the 'Wolverley Glebe' site to the north is also within the same zone.</p> <p>The site's position in close proximity to the Staffordshire and Worcestershire canal and the river Stour means that there may be potential for deterioration in water quality if polluted run-off to reach these watercourses. The proximity of the 'Land South of Wolverley road' site to both this site, and to the canal and river, could mean that cumulative impacts could arise.</p> <p><b>Air quality</b><br/>The site is not within or immediately close to any AQMA. But the Kidderminster (Ring Road) AQMA is only some 2km south, and it HGV traffic associated with minerals extraction and restoration could worsen air quality in this area. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Land South of Wolverley Road' and/or 'Wolverley Glebe', both of which would also be likely to use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality, including through discharges into the Staffordshire and Worcestershire canal and river Stour, should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to likely impacts on the Kidderminster (Ring Road) AQMA.</p> |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate</p> |  | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. Movement to processing plants will depend on whether</p>  | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p>   |

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| <p>change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>   |          | <p>this is on-site or elsewhere, which is currently unclear. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs. Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is very close to the built-up area of Kidderminster, which could provide a market for at least some of the minerals.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration. Although the site is very close to the river Stour, research into viable energy generation from this source (IT Power, Renewable Energy Study 2008) did not suggest the location as having potential.</p> | <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p>  |
| <p><b>7: Flooding</b><br/>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>0</p> | <p>No part of the site falls within a floodzone. Floodzones 2 and 3 associated with the river Stour begin some 110m to the west of the site boundary. There is a negligible spot of 1 in 1000 surface water flooding in the western area of the site, and the site's northern boundary borders another small area of 1 in 1000.</p>  | <p>Although the site is not within a floodzone, opportunities to reduce flooding should be considered as part of a green infrastructure approach to site restoration.</p>  |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity,</p>   | <p>-</p> | <p>Bridleways 625 and 626 pass north to south through the site, very roughly bisecting it through the middle. Footpath 624 passes east-west through the western third of the site. Footpaths 623 and 622 follow the western site boundary. Some or all of these rights of way may be compromised by the development of this site, and may require temporary or permanent closure or diversion, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach.</p> |

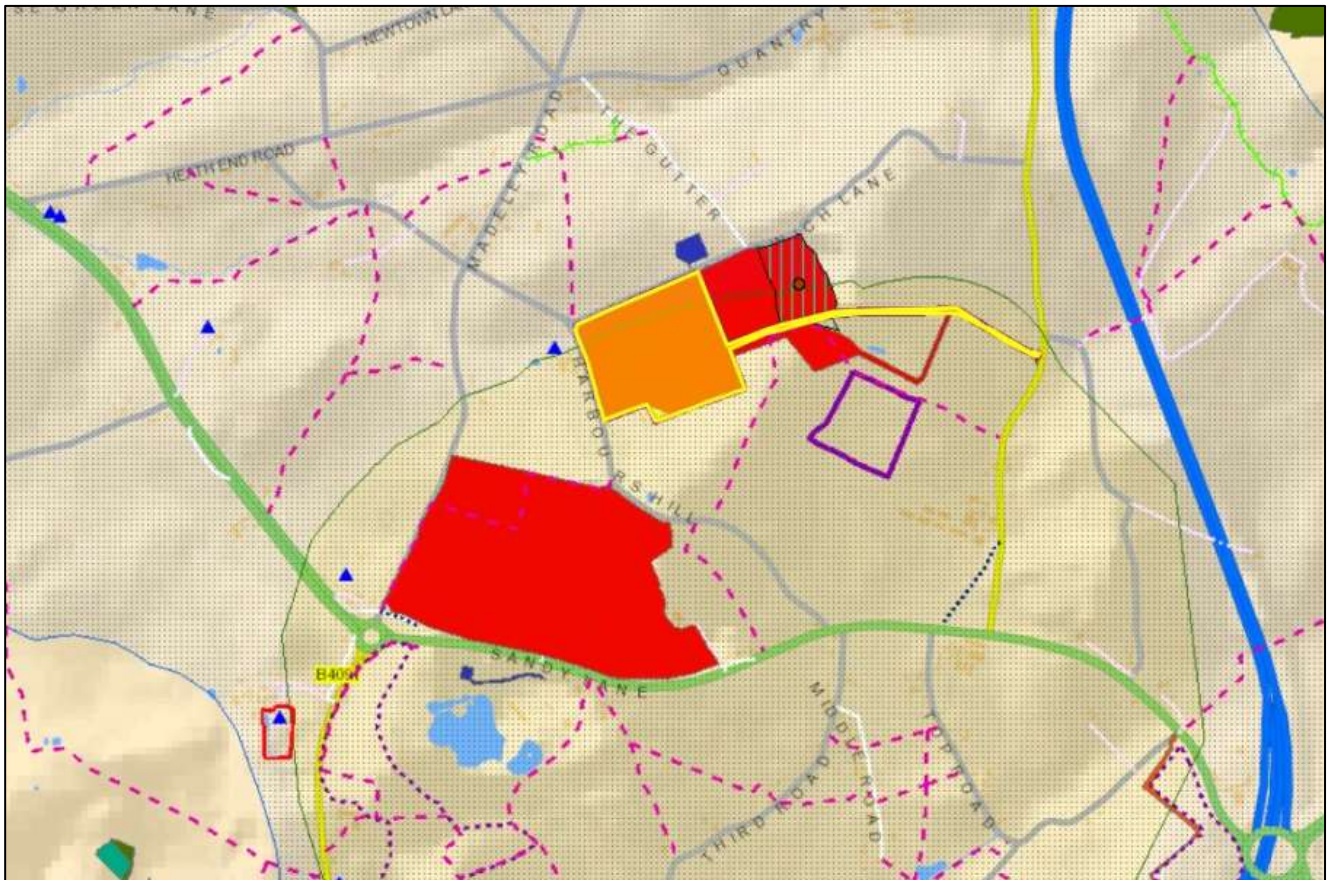
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| <p>disability, socio-economic status or educational attainment.</p>   |          | <p>The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   |  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>                               | <p>-</p> | <p>The site is fairly isolated from residential development, with only a handful of dwellings and farm buildings directly adjacent to the site boundary. The Broadwaters housing estate is some 350m to the south. The former Lea Castle hospital site is also within 350m, to the east, and if this site is redeveloped, potential compatibility issues should be considered, although Lea Castle is fairly well-screened on its western boundary by bands of trees.<br/>                 Heathfield school and St Oswald's primary school are both within reasonably close proximity to the south of Wolverley Road (the buildings being 65m and 290m away, respectively). Heathfield enjoys a fair degree of screening from existing trees, and St Oswald's is a fair distance away to alleviate any negative impacts. The presence of dwellings and other buildings directly alongside the site boundary does raise the potential for negative effects from noise, dust, and vibration and, as such, a minor negative rating is given for this SA objective. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Land South of Wolverley Road' and/or – to a lesser extent – 'Wolverley Glebe'.<br/><br/>                 No major cables, lines, gas pipes or pipelines pass through or near to the site. The safety buffer for the Hanbury - Swindon Junction pipeline runs 1,120m to the east, beyond the Lea Castle site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>The proposed site boundary is not within or close to any waste site or its 250m buffer zone.<br/><br/>                 The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

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| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | - | <p>Although the site is only some 90m from the Staffordshire and Worcestershire canal, and some 150m from the river Stour, there are no facilities to allow the loading or unloading of minerals on these waterways. It is unclear at this stage where processing would take place, so no assumption can be made as to the transport methods to reach the processing plant. Conveyors may offer a more sustainable options for movement within the site than HGVs. Onward transport of the extracted material is, however, likely to be on the road network, using diesel lorries. The site is immediately alongside the A449, which is an advisory route for lorries. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Land South of Wolverley Road' and/or 'Wolverley Glebe', all of which would also be likely to see HGV movements along the same road network.</p> <p>The nearest bus stops are on Park Gate Road, some 300m to the east; Wolverley Road, 640m to the west; and to the south and north of the Wolverhampton road (at 330m and 320m distance, respectively). These services variously serve Kinver, Kidderminster, Halesowen, and other settlements. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means, including conveyors and canal/river transport should be fully explored and maximised where possible.</p>          |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>Provide decent</p>  | + | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district</p>                                  |

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| affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments. |  | housing development within or near the site, no such proposals have been identified at this stage. | policy. |
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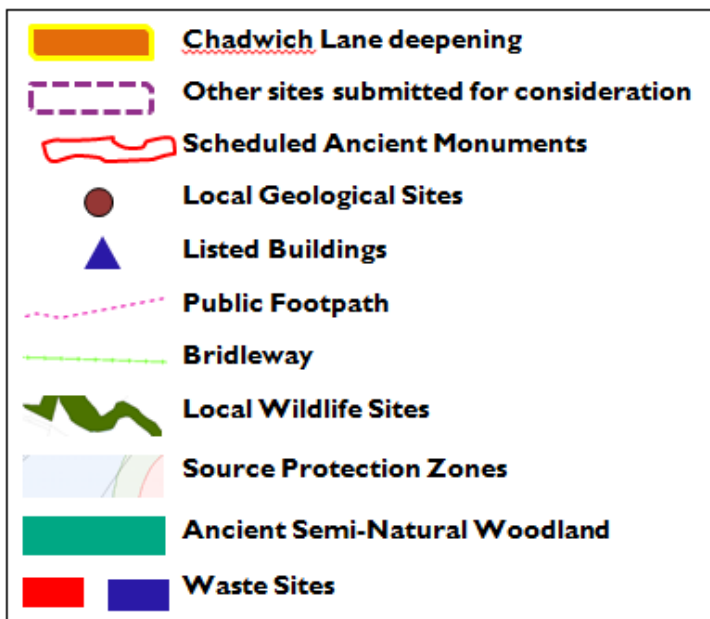
# Site 4: Chadwich Lane deepening

Tonnage unknown, 10Ha, access unknown, processing unknown



To aid clarity, Green Belt is not shown. The entire site is within the Green Belt.

### Legend



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Ordnance Survey 100024230



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | <p>-</p>                     | <p>This site falls wholly within the 'Enclosed Commons' landscape type and the MW147a Land Cover Parcel. Guidance on the landscape type seeks to: conserve and restore distinctive hedgerow pattern with priority given to primary hedgerows; conserve and enhance tree cover along water courses; conserve scale, spatial patterns and specific character of wayside dwellings; promote the creation and appropriate management of natural vegetation communities on non-farmed areas and along highways; conserve and enhance the spatial pattern and scale of the landscape, particularly through opportunities for woodland planting; and promote the development of wide field margins for wildlife benefit.</p> <p>Although minerals extraction will undoubtedly change the local landscape in the short to medium term at the least, a phased approach to working could potentially seek to achieve many of these guidelines. However, it is likely that the spatial pattern and scale of the landscape will be negatively impacted whilst operations are underway. As such, a negative impact on the landscape can be predicted in the short to medium term.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site alongside the nearby 'Chadwich Lane East'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty.</p> <p>There are no national parks and gardens or unregistered historic parks and gardens of local importance within or in close proximity to the site.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced</p> | <p>During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |           | <p>by householders, road traffic, and those using rights of way. The site is quite well isolated from residential development, with a single farm and single dwelling lying just outside its boundary beyond the south-west corner and the western edge, respectively. The only other dwellings within 500m are those around 'Beechcroft Nurseries', and a group of homes around 'The Gutter' to the north. There is a maturing tree boundary along all the sides of the site which face potential receptors.</p>   |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>--</p> | <p>The 'Madeley Heath Pit' geological SSSI is some 140m east of the site proper, with the proposed access road to Money Lane passing through it. The access road could potentially be a source of detrimental impacts on the SSSI, as there is the potential for vibrations, dust, and noise emissions from vehicle movements. Because the access road passes straight through the SSSI, a significant negative rating has been given for this SA objective. The only other SSSI within 1.5km of the site boundary is 'Sling Gravel Pits' geological SSSI which is some 1,475m to the north-west at its closest. The site also falls within SSSI impact zones.</p> <p>In terms of Local Wildlife Sites (LWS), 'Sling Pool and Marsh', a Wet Woodland Marsh Open Water - standing &amp; flowing LWS, is 1,010m north-west, and 'Great Farley and Dale Woods' Broadleaved Woodland LWS is 935m to the north. To the east, there are three LWS within 1.5km of the site or its access road: Waseley Hills Country Park Grassland LWS is about 1,490m from the site proper, but within 940m of the access road; 'Broadmoor Wood &amp; Chadwich Manor Ponds' Broadleaved Woodland LWS is 1,190m south-east of the access road, although no part is within 1.5km of the site proper; similarly, 'Beacon Wood &amp; Chadwich Wood' Broadleaved Woodland LWS is 1,370m to the south-east of the access road, but is not within 1.5km of the site proper. All three of these sites to the east are the other side of the M5 motorway. The 'Hadley, Elmley &amp; Hockley Brooks' Open Water - flowing LWS is marginally beyond 1.5km to the south-west of the site. Given the distances involved and screening between the various LWS and the site (including the motorway), it is considered unlikely that significant negative</p> | <p>The likely impacts on the Madeley Heath Pit SSSI should be considered in detail, and if negative impacts are likely, then appropriate measures should be considered. These may include re-routing the road to avoid the SSSI, ensuring vehicle movements will not give rise to adverse impacts such as noise and dust, installing protective barriers and screening, etc.</p> |



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|  |          | <p>effects will arise.</p> <p>There may be some cumulative impacts as a result of development at the nearby 'Chadwich Lane East', although there are no particular wildlife sites which are obviously at risk of such cumulative impacts. In general terms, cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>Madeley Heath Local Geological Site is within 210m of the east of the main site, some 80m north of the access road. This, too, may be sensitive to cumulative effects if 'Chadwich Lane East' is developed at the same times as this site.</p> <p>Two areas of ancient semi-natural woodland (ASNW) are within 1.5km of the site boundary, including the access road, but only one is within 1.5km of the site proper. These are part of Great Farley Wood, 975m to the north, and Broadmoor Wood, 1,395m away from the closest point of the access road, to the east of the M5. As with the LWS, these ASNW are probably a sufficient distance from the site to avoid significant negative effects.</p> |  |
| <p><b>3: Cultural heritage, architecture and</b></p> | <p>-</p> | <p>There are no scheduled ancient monuments (SAMs) within the site or in close proximity. The nearest SAM is the 'Moated site at Fairfield Court', some 1,020m to the south-west, but this is isolated from impacts by</p>   | <p>As part of any historic environment assessment carried out to support a planning application, there should be a</p> |

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| <p><b>archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>  |  | <p>virtue of distance and intervening development, not least the major A491/B4091 roundabout.</p> <p>There are 14 listed buildings within 1.5km of the site, with the closest being Lower Madeley Farmhouse, which is within 60m of the site's western boundary, immediately the other side of Harbours Hill. All of the buildings except two are listed at Grade II; Chadwick Manor to the south-east, and Fairfield Court to the south-west are listed at Grade II*. Desktop research suggests there may not be a strong degree of inter-visibility between Lower Madeley Farmhouse and the site, which rises away from the listed building and is reasonably screened by tree cover. Upper floors, however, may have clearer views. Given the distances involved and the degree of screening, it is not considered likely that any other listed building within 1.5km would experience significant negative impacts. Cumulative impacts could also arise if the nearby 'Chadwich Lane East' were to be developed at the same time.</p> <p>There are no Conservation Areas in close proximity to the site.</p> | <p>focus on those assets most clearly related to the site by the nature of their setting, including Lower Madeley Farmhouse. Consideration should be given to limiting any activities that could compromise this asset's setting by adopting screening and/or an appropriate buffer zone.</p>   |
| <p><b>4: Material assets</b><br/>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</p> |  | <p>Most of the site itself (around 84%) falls within grade 3 agricultural land, with the remainder of the site, and almost all of the access road, being on grade 4 land. More detailed mapping, to show whether the Grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land (BMV). In the absence of more accurate data, a precautionary approach has been taken, and it has been assumed that some loss of best and most versatile land would occur.</p> <p>The site is wholly within the Green Belt. Whilst mineral extraction is not an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p>  | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land if this is present. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |

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| space/green infrastructure.  |     | There are no village greens within or in close proximity to the site.  |  |
| <b>5: Natural Resources</b><br>Protect and enhance water and air quality.  | -   | <p><b>Water quality</b><br/>All of the site falls within Source Protection Zone 3, and the southern part – around 80% of the site, and the entirety of the access road – falls within Source Protection Zone 2. Any negative water quality impacts could be worsened through cumulative effects if this site were to be developed in parallel with 'Chadwich Lane East'.</p> <p><b>Air quality</b><br/>The site is not within or immediately close to any AQMA. But there are AQMAs in Bromsgrove and, notably, at Junction 1 of the M42. If material is moved by diesel HGV and passes this junction, air quality could be negatively impacted. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Chadwich Lane East', which would also be likely to use HGVs and to pass along the same road network.</p>  | <p>Measures to ensure the protection of water quality, including protection of the groundwater resource, should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Bromsgrove and M42 J1 AQMAs.</p>   |
| <b>6: Climate Change and energy</b><br>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. Movement to processing plants will depend on whether this is on-site or elsewhere, which is currently unclear. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs. Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is over 4km (as the crow flies) to the nearest major urban area (Bromsgrove town), but its position close to the motorway network gives many options for final onward movement, which may or may not be local. | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |

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|   |   | There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.   |  |
| <b>7: Flooding</b><br>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 part of the site falls within a floodzone. The nearest floodzone is almost 1km to the west. Maps suggest that no surface water flooding is present either.   | Although the site is not within a floodzone, opportunities to reduce flooding should be considered as part of a green infrastructure approach to site restoration.   |
| <b>8: Access to Services</b><br>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.        | - | No public rights of way pass through the site itself, although footpath 594 does follow the site's eastern boundary and the site access road cuts through this. Footpath 596 also abuts the access road.<br><br>Some of these rights of way may be compromised by the development of this site, and may require temporary or permanent closure or diversion, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely. Cumulative impacts on rights of way could arise if 'Chadwich Lane East' is developed at the same time as this site; although each site would only (potentially) affect one footpath (596 and 594, respectively), if both footpaths are affected this creates a more significant local issue. | Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation. |
| <b>9: Health and amenity</b>  | - | There are a handful of farm buildings and dwellings in close proximity to the site's western and south-western boundary. Even with screening in   | Appropriate safeguards should be put in place to ensure residential amenity and  |

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| <p>Improve the health and well-being of the population and reduce inequalities in health.</p>  |          | <p>place, their proximity may mean that a degree of noise disturbance is experienced, but this will depend on local topography, working practice, buffer zones, etc. There are also businesses and a dwelling to the north within 500m, scattered around Madeley Road and Quantry Lane, but these are considered to be a sufficient distance from the site to render significant negative impacts unlikely. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Chadwich Lane East'.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> <p>An electricity transmission line also runs south-west – north-east through the site. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> | <p>reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors. Appropriate measures to accommodate the infrastructure constraints should be clearly set out.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>Due to the site's location in an area of historic quarrying, there are several landfill sites in close proximity, as well as other waste management uses. Chadwich Lane Quarry has largely been restored with landfill, and this directly abuts the site along its eastern boundary. Sandy Lane Landfill Site and biological treatment site lies to the south of Harbours Hill, within some 160m at its closest point. The Sandy Lane site is partly restored, but some waste uses are ongoing. There is a waste transfer station immediately the other side of Chadwich Lane to the north of the site. Quantry Lane household recycling centre is 1.1km north-east of the site. Unsurprisingly, the site falls within the 250m buffer zone of all of these sites, except the household waste site, which requires the potential for compatibility issues to be considered. Minerals extraction is not considered to be an activity likely to compromise waste management functions, and nor is waste management likely to</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

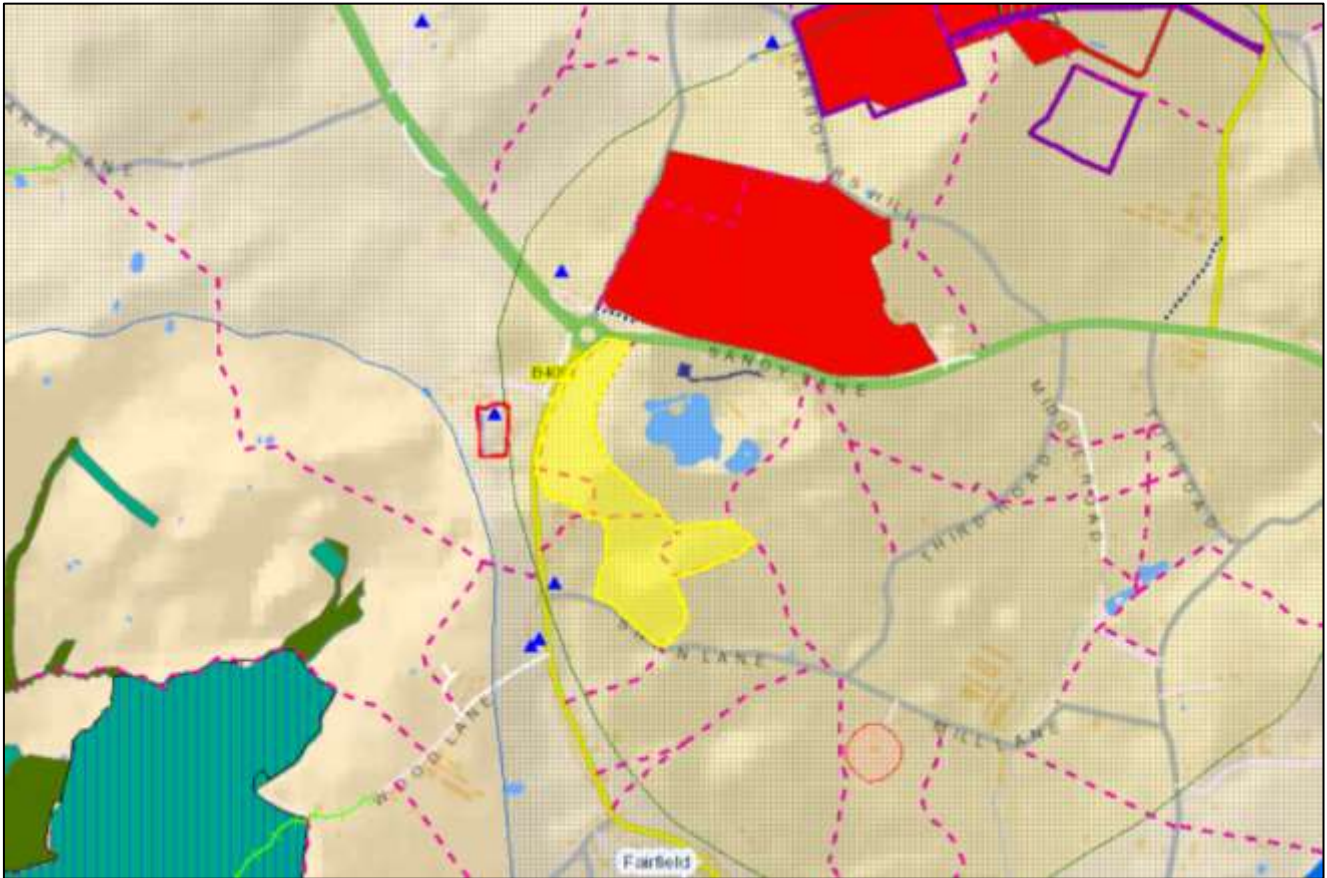
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|  |   | <p>compromise minerals extraction.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   |  |
| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | - | <p>There are no railheads or freight-navigable watercourses in close proximity to the site. It is unclear at this stage where processing would take place, so no assumption can be made as to the transport methods to reach the processing plant. Conveyors may offer a more sustainable options for movement within the site than HGVs. Onward transport of the extracted material is, however, likely to be on the road network, using diesel lorries. The presence of junction 4 of the M5 within 2.4km (measured along roads), means that this will be the most likely conduit for minerals.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Chadwich Lane East', all of which would also be likely to see HGV movements along the same road network.</p> <p>The nearest bus stops are off Quantry Lane, some 850m to the north, and on Top Road, off Sandy Lane, some 900m to the south. These stops are for services to Halesowen. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised.</p>   |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |

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| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |
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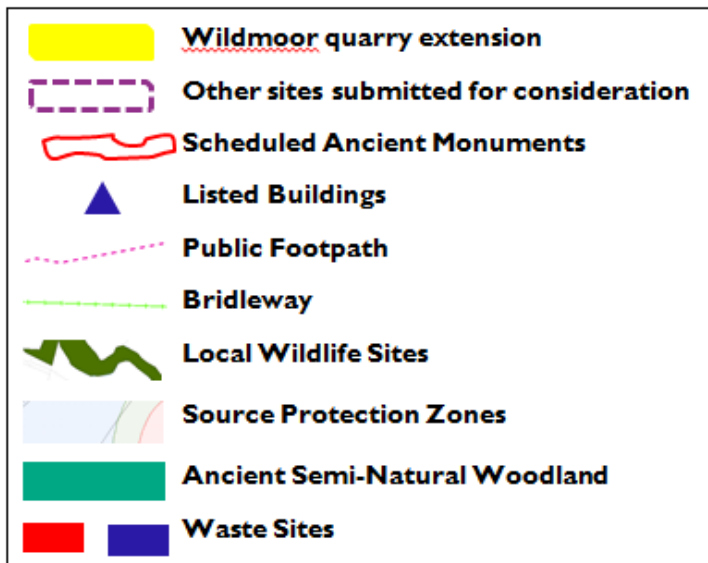
# Site 5: Wildmoor Quarry extension

1,000,000t, 12Ha, access unknown, processing unknown



To aid clarity, Green Belt is not shown. The entire site is within the Green Belt.

### Legend





| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls wholly within the 'Principal Settled Farmlands' landscape type. The majority of the site falls within Land Cover Parcel MW127a, with a small area, especially in the north, falling within MW127g.</p> <p>Guidance on the landscape type seeks to "<i>conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture</i>".</p> <p>Although minerals extraction will undoubtedly change the local landscape in the short to medium term at the least, a phased approach to working could potentially seek to achieve many of these guidelines. However, it is unlikely to be possible to conserve all remaining areas of permanent pasture during operations (although this could inform restoration plans). As such, a negative impact on the landscape can be predicted in the short to medium term.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty.</p> <p>There are no national parks and gardens or unregistered historic parks and gardens of local importance within or in close proximity to the site.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way. The site is quite well isolated from residential development, although there is a cluster of farms, houses and a pub south-east of the site, either side of Stourbridge Road, as well as the settlement of Fairfield itself, and some more isolated farms and dwellings south and east along Swan Lane and Third Road. The site rises quite steeply away to the east from the</p> | <p>Restoration priorities should include appropriate hedgerow restoration and new planting in keeping with the existing historic field boundary character to develop layered screening of the site as the hedges mature.</p> |

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|   |    | Stourbridge Road, meaning that the site is visible from certain stretches of the road and beyond.  |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>                 Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>                                    | 0  | <p>The 'Feckenham Forest' biological SSSI is 670m to the south-west, and the 'Madeley Heath Pit' geological SSSI is some 1.2km north-east of the site. Connectivity between the site and these SSSIs will be limited due to intervening roads, trees, and built development.</p> <p>The only Local Wildlife Site within 1.5km of the site boundary is the 'Hadley, Elmley &amp; Hockley Brooks' Open Water - flowing LWS, some 485m to the west. No significant negative impacts on this LWS are expected to arise as a result of minerals extraction at this site.</p> <p>The Madeley Heath Local Geological Site is some 1,250m to the north-east, beyond Sandy Lane. Given the distance involved, adverse impacts on this site are not envisaged.</p> <p>Pepper Wood ancient semi-natural woodland (ASNW) is 470m to the west. Part of Cross Coppice ASNW is 900m west, and part of Poolhouse Dingle ASNW is 1,250m to the west. As these areas are well beyond the site boundaries, direct removal of trees is unlikely. There is the potential for negative impacts to arise as result of dust (although the sites' location away from the prevailing wind direction may limit this potential) and changes to drainage, but this is considered unlikely given the distances involved.</p> | <p>The potential impacts on biodiversity and geodiversity should be carefully considered as part of any planning application.</p>   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-</p> | -- | <p>The 'Moated site at Fairfield Court' is a scheduled ancient monument just the other side of Stourbridge Road, some 75m west of the site. Although the site appears relatively self-contained within a dense tree boundary, it could still be negatively impacted upon by minerals extraction. Although the presence of the Stourbridge Road already acts to distract from the asset's setting to the east, minerals extraction could nevertheless cause disturbance to the asset's setting, and may act in combination with the road to generate unacceptable negative impacts.</p>   | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the Moated Site at Fairfield Court, Fairfield Court itself, and the other listed buildings in close proximity, especially 188 Stourbridge Road.</p> |

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| <p>efficient development which respects local character and distinctiveness.</p>  |    | <p>There are 10 listed buildings within 1.5km of the site, all of which are listed at Grade II, except for Fairfield Court, which is listed at Grade II* and is some 110m west of the site, beyond Stourbridge Road. The closest listed building to the site is 188 Stourbridge Road, which is within 100m of the south-west corner of the site and is on the same side of the Stourbridge Road. There is potential for these listed buildings, especially 188 Stourbridge Road (which does not appear to enjoy a high degree of screening) to experience negative impacts on their settings.</p> <p>There are no Conservation Areas in close proximity to the site.</p>   | <p>Consideration should be given to limiting any activities or extent or working that could compromise their settings, including the adoption of screening and/or appropriate buffer zones.</p>  |
| <p><b>4: Material assets</b><br/>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>Most of the site (around 67%) falls within grade 3 agricultural land, with a small proportion to the east and north falling within grade 2. More detailed mapping, to show whether the Grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. Whilst some best and most versatile land would therefore be affected, it is unclear whether this would be only those areas of grade 2 land, or whether there would also be impacts on grade 3a land. Given the scale of the site, the 33% that is definitely grade 2 amounts to around 4 hectares, thereby representing a not inconsiderable amount of BMV that would potentially be lost, at least in the short to medium term.</p> <p>The site is wholly within the Green Belt. Whilst mineral extraction is not an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p> <p>There are no village greens within or in close proximity of the site.</p> | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | -  | <p>Water quality<br/>All of the site falls within Source Protection Zones 2 and 3.</p> <p>Air quality</p>  | <p>Measures to ensure the protection of water quality, including protection of the groundwater resource, should be in place.</p>   |

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|  |            | <p>The site is not within or immediately close to any AQMA. But there are AQMAs in Bromsgrove and, notably, at Junction 1 of the M42. If material is moved by diesel HGV and passes this junction, air quality could be negatively impacted.</p>   | <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Bromsgrove and M42 J1 AQMAs.</p>  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. Movement to processing plants will depend on whether this is on-site or elsewhere, which is currently unclear. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs. Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is over 3km (as the crow flies) to the nearest major urban area (Bromsgrove town), but its position close to the motorway network gives many options for final onward movement, which may or may not be local.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to</p>                   | <p>0</p>   | <p>No part of the site falls within a floodzone. The nearest floodzone is around 750m to the east. Maps suggest a very small area of 1 in 1000 surface water flooding in the southern part of the site, and bordering the south-eastern extent of the site.</p>  | <p>Although the site is not within a floodzone, opportunities to reduce flooding should be considered as part of a green infrastructure approach to site restoration.</p>  |

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| <p>surface water flooding in all other areas.</p>   |   |  |  |
| <p><b>8: Access to Services</b><br/>                 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>Footpath 675 follows the site's north-eastern boundary, and extends some 210m into the centre of the site. Footpath 676 and 683 follow the south-east of the site, with 676 extending right into the site, bisecting it east to west. A small length of footpath 604 also extends into the site.</p> <p>Some of these rights of way may be compromised by the development of this site, and may require temporary or permanent closure or diversion, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | - | <p>There is a cluster of farms, houses and a pub south-east of the site, either side of Stourbridge Road, as well as the settlement of Fairfield itself, and some more isolated farms and dwellings south and east along Swan Lane and Third Road. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to gas pipeline safety zones. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate. Appropriate measures to accommodate the infrastructure constraints should be clearly set out.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1)</p>  | 0 | <p>Due to the site's location in an area of historic quarrying, there are several landfill sites in close proximity, as well as other waste management uses.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not</p>  |

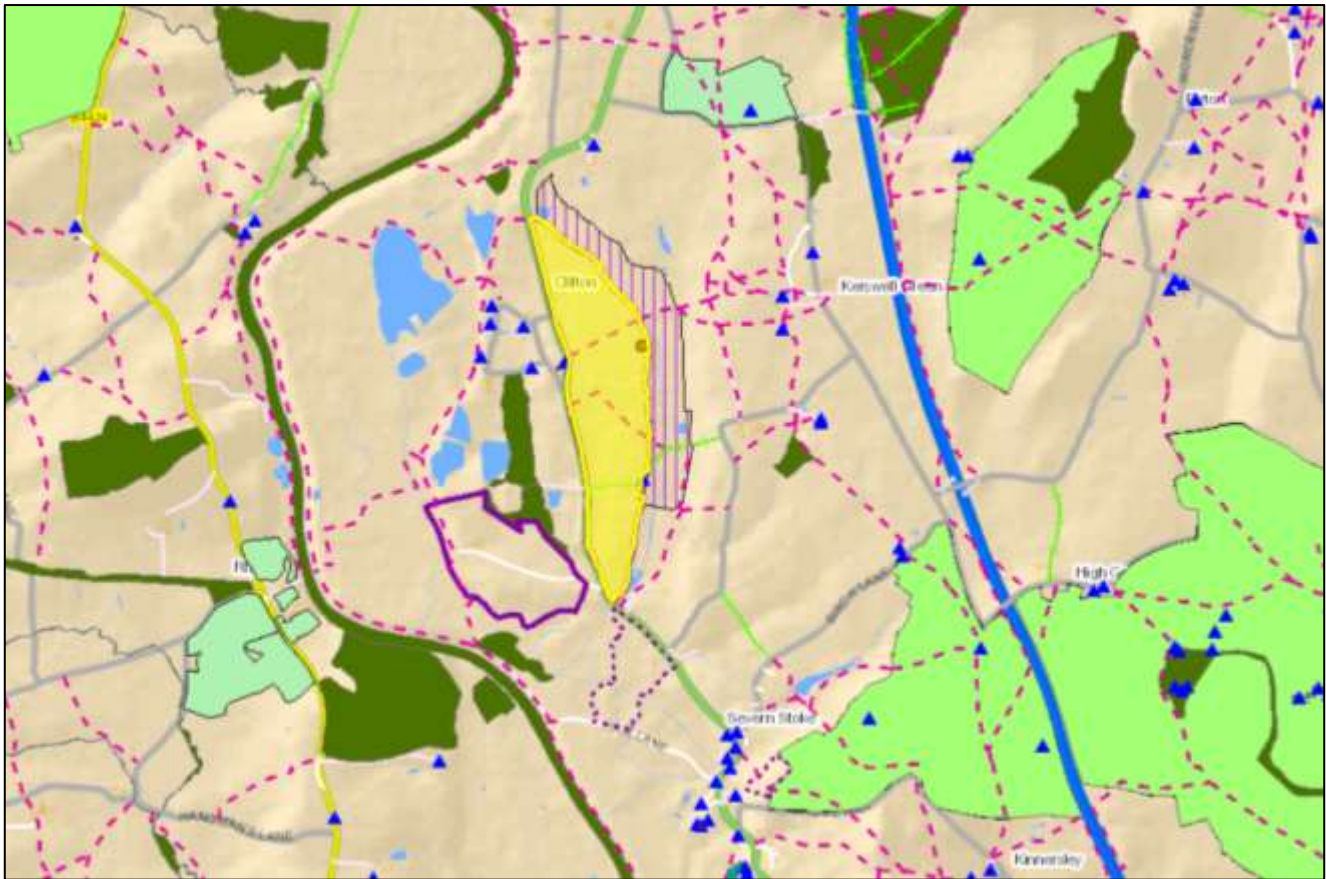
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| <p>reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>  |          | <p>Sandy Lane landfill site and biological treatment site are within 60m and 100m to the north, respectively. The northern part of the site falls within the 250m buffer zone for these sites.</p> <p>The former Chadwich Lane quarry, now largely restored with landfill, is some 1,050m to the north, and there is a waste transfer station 1,130m to the north.</p> <p>Minerals extraction is not considered to be an activity likely to compromise waste management functions, and nor is waste management likely to compromise minerals extraction.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>been identified.</p>  |
| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p> | <p>-</p> | <p>There are no railheads or freight-navigable watercourses in close proximity to the site. It is unclear at this stage where processing would take place, so no assumption can be made as to the transport methods to reach the processing plant. Conveyors may offer a more sustainable options for movement within the site than HGVs. Onward transport of the extracted material is, however, likely to be on the road network, using diesel lorries. The presence of junction 4 of the M5 within 2.3km (measured along roads), means that this will be the most likely conduit for minerals.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>The nearest bus stops are at the junction of Stourbridge Road and Swan Lane, some 130m west of the site, and off the Stourbridge Road, 270m north-west. Services go to and from Bromsgrove and Stourbridge. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised.</p>   |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a</p>   | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative</p> |

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| <p>knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>   |                                      | <p>growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>uses in county and district policy.</p>  |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

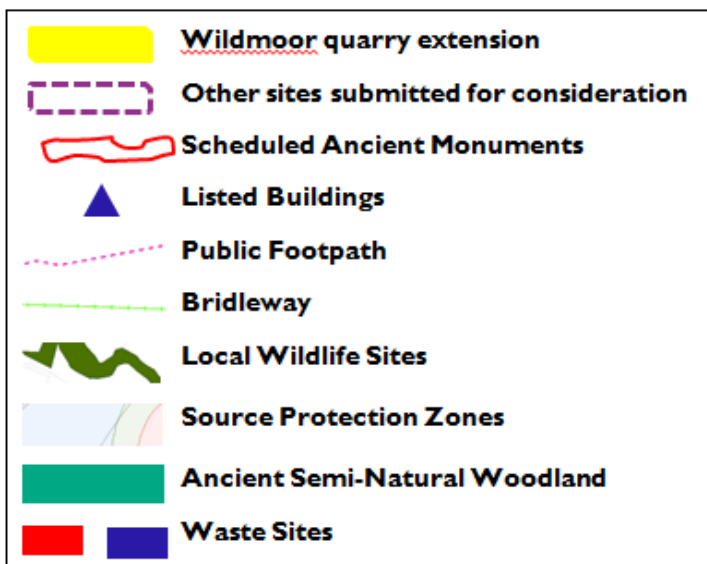


# Site 6: Clifton East

1,200,000t, 52Ha, access by conveyor, processing at existing plant at Clifton.



## Legend





| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls wholly within the 'Settled Farmlands on River Terrace' landscape type and the MW65.2b Land Cover Parcel.</p> <p>Guidance on the landscape type seeks to "<i>retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; seek to maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows</i>".</p> <p>Minerals extraction will undoubtedly change the local landscape in the short to medium term at the least, although a phased approach to working could potentially seek to achieve many of these guidelines. However, the maintenance of horticultural cropping uses would clearly not be possible in those areas where extraction occurs. As such, a negative impact on the landscape can be predicted in the short to medium term.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in close proximity ('Clifton South' and 'Severn Stoke, Sandford'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is some distance from both the Malvern Hills and the Cotswolds AONBs, at 6.3km and 8.5km, respectively.</p> <p>Croome Court Grade II* Registered Park and Garden is 1,075m to the south-east, and the Grade II Pirton Park is 1,430m to the east. There are also unregistered historic parks and gardens of local importance within 1.5km. These are The Nash, 790m north-east, and Rhydd Court, west of the river Severn, some 1,360m away. As there is relatively little built</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |           | <p>development between the site and these assets, it is possible that some negative impact could be experienced from higher locations although, given the distances involved, this may not be significant.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way. The site is quite well isolated from built-up areas, with the only dwellings in close proximity being those at Clifton – especially those fronting the A38. There are also some isolated farms and other buildings within 500m of the site boundary. As this area is generally open countryside with long-distance views, lacking in significant built development, there is the potential for negative visual impacts to be experienced by surrounding properties.</p>   |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>--</p> | <p>The site directly abuts the Ashmore Common SSSI, a linear area designated for both its biological and its geological interest, which extends along most of the site's eastern boundary. There are no other SSSIs within 1.5km. The site is within two SSSI impact zones. Given the close proximity of the SSSI, and the fact that the site adjoins it for such a long length along its border, the potential for negative impacts cannot be discounted.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are ten LWS within 1.5km of the site boundary:</p> <ul style="list-style-type: none"> <li>- The Clifton Arles LWS, designated for its Grassland Marshland Swamp Wet Woodland, is west of the site, within 100m at its closest point.</li> <li>- The Bogs, designated for its Open Water - standing Swamp, is some 190m to the north-west.</li> <li>- Brickpits Plantation &amp; Sandford Pits LWS, designated for its Open Water - standing Wet Woodland, is some 460m to the south-west.</li> <li>- The River Severn Open water – flowing LWS is to the north, west and south, and is 500m away at its closest point (in the</li> </ul> | <p>Consideration should be given to avoiding extraction on the eastern edge of the site if activities could cause negative impacts on the SSSI and on the Ashmoor Common LGS. The adoption of buffer zones should be considered. Impacts on nearby LWS and ASNW also need to be taken into account.</p> |

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|  |  | <p>north-west).</p> <ul style="list-style-type: none"> <li>- Birch Arles, a Broadleaved Woodland LWS, is 600m to the east.</li> <li>- Cliffey Wood &amp; Cliffs, a Broadleaved Woodland LWS, is 830m to the south-west.</li> <li>- Madresfield Brook, an Open Water – flowing LWS, is 970m to the west.</li> <li>- Normoor Common is a Grassland Marshland Open Water-ditch Scrub LWS 990m to the north-east.</li> <li>- Frieze Wood is a Broadleaved Woodland some 1,230m to the north-west.</li> <li>- Kempsey &amp; Stonehall Commons is a Grassland Marshland Scrub LWS some 1,470m north-east, east of the M5 motorway.</li> </ul> <p>Most of these LWS involve marshland or wet woodland, meaning that it is crucial that the site does not adversely affect drainage and flow in the local area. Some are in close proximity, with little by way of screening, and so there is the potential for negative impacts to arise. Any negative impacts that might arise could be worsened through the cumulative effects of also developing nearby sites ('Clifton South' in particular could lead to cumulative impacts on The Bogs and Clifton Arles, and 'Severn Stoke, Sandford' could, in particular, lead to cumulative impacts on Brickpits Plantation &amp; Sandford Pits and the River Severn). Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> |  |
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|  |           | <p>The Ashmoor Common Local Geological Site is within the site boundary, close to its eastern edge. There is obvious potential for this site to be disturbed through insensitive working in this area, and so this will need to be carefully considered to ensure harm does not arise.</p> <p>Part of Clifton Arles Ancient Semi-Natural Woodland (ASNW) is 165m to the west. Birch Arles ASNW is 610m to the east.</p> <p>Part of Frieze Wood ASNW is 1,280m north-west, the other side of the river Severn. Severn Bank Wood ASNW is 1,430m to the south. As these areas are well beyond the site boundaries, direct removal of trees is unlikely. There is the potential for negative impacts to arise as result of dust (although the sites' location away from the prevailing wind direction may limit this potential) and changes to drainage, but this is considered unlikely given the distances involved.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>--</p> | <p>There are no Scheduled Ancient Monuments (SAMs) within or in close proximity to the site. The only Scheduled ancient Monument within 1.5km is the churchyard cross in St Denys's churchyard, which is 1,180m to the south, and which is screened by trees around the church that should mean that there is no inter-visibility between the asset and the site.</p> <p>There are no listed buildings within the site, but an unnamed Grade II listed seventeenth century timber-frame and painted brick cottage abuts the south-eastern site boundary, and its setting is in a panoramic open landscape which would be negatively affected, at least in the short to medium term, by minerals extraction. Another Grade II building, The Maltings, lies in close proximity, separated only by the A38. This building's setting includes the broad, uninterrupted grass landscape to the east which would be compromised by minerals extraction. Notwithstanding the above, it should be recognised that the area has seen historic and ongoing minerals working, which may be seen to be part of the setting; this is a judgement for a site-specific assessment at a more detailed level. In total, 37 listed buildings are found within 1.5km of</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby listed buildings. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |

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|   |           | <p>the site boundary. Of these, 35 are listed at Grade II. The Church of St Denys is Severn Stoke is 1,150m to the south and is listed at Grade II*. The Panorama, a Grade I listed 'eyecatcher temple', is some 1,300m to the south-east. Cumulative impacts on heritage assets could also arise if nearby sites ('Clifton South' and/or 'Severn Stoke, Sandford') were to be developed at the same time.</p> <p>There are no Conservation Areas in close proximity to the site.</p> <p>The adjacent Ashmore Common is a site with high potential for preserved organic remains sealed within peat deposits. Any such remains would be at high risk of desiccation if there were to be any loss of site hydration.</p> |  |
| <p><b>4: Material assets</b><br/>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>Almost the entire site falls within grade 1 agricultural land, with a very small part to the east falling within grade 2. All of this land is considered to be 'best and most versatile', and so there will be negative impacts in relation to this SA objective, at least in the short-medium term.</p> <p>The site is not within the Green Belt and there are no village greens within or in close proximity to the site.</p>  | <p>Soil should be stripped and stored to enable site restoration, or to use elsewhere.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p>  | <p>Water quality<br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p>Air quality</p>  | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken.</p>   |

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|  |            | <p>The site is not within or immediately close to any AQMA, and there are not currently any AQMAs within Malvern Hills district. Any negative air quality impacts that do arise could be worsened through cumulative emissions if this site were to be developed in parallel with 'Clifton South' and/or 'Severn Stoke, Sandford'. The vehicles from all of these sites would be likely to use the same road network.</p>   |  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. Indications are that processing would take place at the existing processing plant at Clifton quarry, which is only some 320m to the west of the site boundary. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a rural location, some distance from the nearest major urban area.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to</p>                   | <p>0</p>   | <p>The site is largely surrounded by Floodzone 2, which is immediately adjacent to the site boundary on its eastern side, and a small part of which covers the site's southern extremity. Part of Floodzone 3 also runs alongside the south-eastern site boundary, and a very small part of this extends into the site in this area.</p> <p>There does not appear to be any surface water flooding within the site, although there are extensive areas of 1 in 30, 1 in 100, and 1 in 1000 surface water flooding beyond the site's eastern boundary.</p>   | <p>Although the site is not within a floodzone, opportunities to reduce flooding should be considered as part of a green infrastructure approach to site restoration.</p>  |

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| <p>surface water flooding in all other areas.</p>   |           |  |  |
| <p><b>8: Access to Services</b><br/>                 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>The site is crossed roughly west to east by three public rights of way: Footpath 525 in the north and 530 in the centre, and bridleway 537 in the south.</p> <p>It is likely that these rights of way may be compromised by the development of this site, and may require temporary or permanent closure or diversion, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>  | <p>The site is quite well isolated from built-up areas, with the only dwellings in close proximity being those at Clifton – especially those fronting the A38. There are also some isolated farms and other buildings within 500m of the site boundary.</p> <p>There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. The houses at Clifton are not in the direction of the prevailing wind, which could help to reduce the likelihood of negative dust and noise impacts. Nevertheless, some properties are very close to the proposed site boundary, meaning that negative impacts could potentially arise. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Clifton South' and/or 'Severn Stoke, Sandford'.</p> <p>There are no major accident hazard pipelines within or near to the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the</p>  | <p>0</p>  | <p>There are no waste sites within or in close proximity to the site.</p> <p>The likely scale and nature of wastes arising from minerals extraction and</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this</p>   |

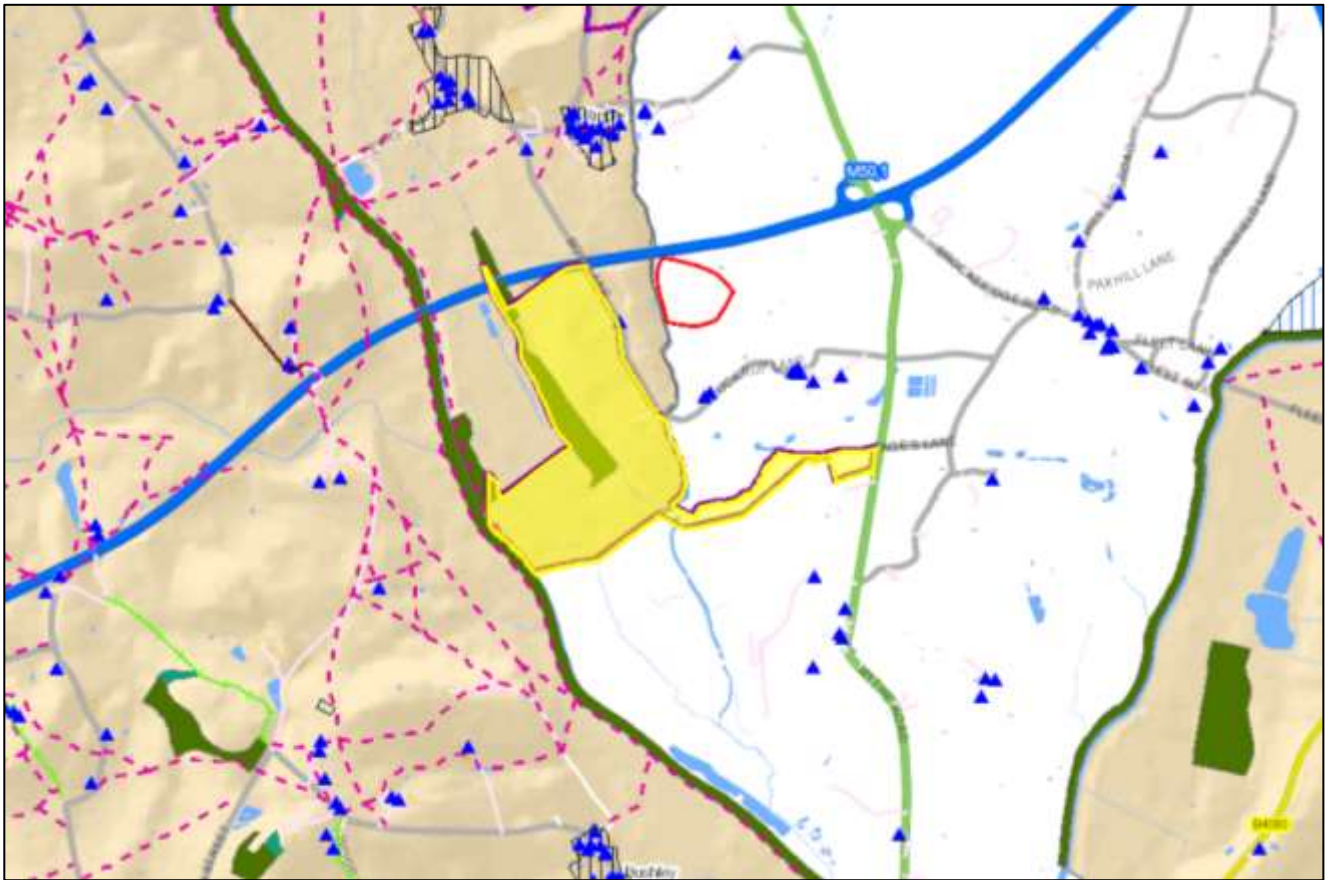
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| <p>waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>   |          | <p>processing is unclear at this stage.</p>  | <p>SA objective has not been identified.</p>   |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                  | <p>-</p> | <p>There are no railheads in close proximity to the site, but the river Severn is within about 620m to the west at its closest. The Severn is currently used for the movement of minerals between extraction and processing, but not for onward movements. This could provide opportunities for more sustainable movements than using HGVs on the road network. The A38 is an advisory road for HGV movements, and so is appropriate for this use. The site is not in close proximity to any major urban areas where the material may be more likely to be used, and is over 9km away (measured along roads) from the nearest motorway junction (junction 1 of the M50), which is the most obvious route for onward transport.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Clifton South' and/or 'Severn Stoke, Sandford', all of which (alongside many of the other sites close to the A38) would be likely to see HGV movements along the same road network.</p> <p>There is a bus stop along the A38, adjacent to the site's western boundary, with services to and from Worcester and Upton. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Severn, the potential for water-borne transport should be explored.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the</p> | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                               |



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| <p>benefits, urban and rural.</p>  |                                      |  |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 7: Bow Farm

2,000,000t, 86Ha, access: conveyor or road to A38 in Glos., processing unknown.



## Legend

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|  | <b>Bow Farm</b>                                |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Scheduled Ancient Monuments</b>             |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Sites of Special Scientific Interest</b>    |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |



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Ordnance Survey 100024230

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The site spans three landscape types. Roughly the western half of the site, alongside the Severn, falls within 'Riverside Meadows', whereas most of the eastern half falls within 'Settled Farmlands on River Terrace'. The eastern-most part of the site, which runs to the A38, is within the 'Principal Settled Farmlands' landscape type.</p> <p>Guidance on the 'Riverside Meadows' landscape type seeks to retain the unity of the linear form of these landscapes; to conserve all existing areas of permanent pasture; to seek opportunities to encourage the conversion of arable land back to arable; to conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; to conserve existing wetland habitats and seek opportunities for further wetland habitat creation; to avoid building or road construction works; to avoid further drainage of waterside meadows; and to explore opportunities to return to patterns and processes of natural flooding cycles where feasible.</p> <p>Guidance on the 'Settled Farmlands on River Terrace' landscape type seeks to: retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows.</p> <p>Guidance on the 'Principal Settled Farmlands' landscape type seeks to: conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture.</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |           | <p>The site spans four Land Cover Parcels: MW33.11a in the west, alongside the Severn; MW69c and MW69b in the centre; and MW71.1b in the east, which extends beyond the A38.</p> <p>Although phased working may allow some of these guidelines to be met, it is inevitable that minerals extraction will change the local landscape in the short to medium term at the least, and will compromise at least some of these guidelines. As such, a negative impact on the landscape can be predicted in the short to medium term.</p> <p>The site is some distance from both the Malvern Hills and the Cotswolds AONBs, at 7.5km and 4.3km, respectively.</p> <p>There are no nationally-registered parks and gardens in close proximity to the site, nor any unregistered historic parks and gardens of local importance.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way. The site is quite well isolated from built-up areas. There is a farm within the site, and some scattered farms and dwellings to the east of the site, along Bow Lane and Puckrup Lane. The Puckrup Hall golf course is also in close proximity. Many properties and roads to the south and south-west of the site have far-reaching open views to the Malvern Hills, and minerals extraction would almost certainly create negative visual impact without suitable screening, depending on topography.</p> |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>--</p> | <p>The only SSSI within 1.5km of the site is 'Windmill Tump, Bushley Green', designated for its geological interest. The SSSI is some 1,150m to the south-west, the other side of the river Severn. All of the site falls within SSSI impact zones. Given that the SSSI is such a distance away, and is divided from the site in places by trees the river Severn, as well as being away from the prevailing wind direction, it is not considered likely that significant negative impacts will arise on the SSSI as a result of extraction</p>  | <p>Consideration should be given to avoiding extraction in the vicinity of sensitive sites, including the two LWS which overlay the site. The adoption of buffer zones could be considered but, given the high risk of dewatering the designated site's swamps and woodland, this may not provide</p> |

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|  |           | <p>here.</p> <p>The site includes almost all of the 'Ripple Lake &amp; The Napps' Local Wildlife Site (LWS) with its habitat of 'Broadleaved Woodland Open Water - standing Swamp'. This LWS runs north-west to south-east through the centre of the site. The 'Ripple Meadow' grassland LWS is to the west, and a small part of this falls within the site's western boundary. The 'River Severn' Open Water – flowing LWS runs alongside the site's western boundary.</p> <p>The 'Queenhill Brickpit' Open Water - standing Marshland Grassland LWS is 700m to the north-west.</p> <p>The 'Aggberrow, Sarn Hill &amp; Voulter's Woods' Broadleaved Woodland LWS is just beyond 1.5km to the south-west.</p> <p>Given the location of these LWS, including notably two within the site itself, there is the potential for negative impacts to occur from minerals extraction. Many of the LWS are designated for their marshland or wet woodland habitat, meaning that it is crucial that the site does not adversely affect drainage and flow in the local area.</p> <p>Due to the cross-boundary location of this site, any proposals should seek discussions with relevant parties in Gloucestershire to identify any biodiversity and geodiversity implications.</p> <p>Aggberrow Wood Ancient Semi-Natural Woodland (ASNW) is just beyond 1.5km to the south-west.</p> | <p>sufficient mitigation, and it may not be possible to mitigate the anticipated impacts.</p>  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed</p> | <p>--</p> | <p>Towbury Hill camp Scheduled Ancient Monument (SAM) is in Gloucestershire, within 240m of the site's eastern boundary. Although the asset's setting may be compromised to some degree by the adjacent M5 motorway, minerals extraction too could have a negative impact on its setting.</p> <p>Other SAMs within 1.5km are Uckinghall cross, 840m to the north; Ripple village cross, 630m to the north; the cross north of St Mary's</p>  | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby SAM and listed buildings. Consideration should be given to limiting any activities that could</p> |

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| <p>and resource-efficient development which respects local character and distinctiveness.</p>   |  | <p>Church, in Ripple, 650m to the north; and the churchyard cross in St Nicholas's churchyard, 1km west. All of these four SAMS are the other side of the M5 motorway from most of the site, which may reduce the potential for impacts.</p> <p>There are approximately 94 listed buildings within 1.5km of the site, with the closest of these being the Grade II listed Puck Cottage, almost adjacent to the site's eastern boundary, just the other side of Bow Lane. Almost all of the listed buildings are Grade II, except for the Grade I listed Church of St Mary, some 635m to the north, and the Grade II* Pull Court, Screen, Archway and Gates (800m west), and Church of St Nicholas (1,025m west). Although there is some tree planting between Puck Cottage and the site, this may take some time to mature, and it is likely that operations on the site could negatively impact on its setting. Similarly, there could be negative impacts on some of the other listed buildings to the east and south of the site.</p> <p>Ripple Conservation Area is 450m north, with Uckingham Conservation Area 700m north. Bushley Conservation Area is 1,235m to the south.</p> | <p>compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p>   |
| <p><b>4: Material assets</b><br/>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 is split within this site, with no single grade being overwhelmingly largest by proportion. The west and east are Grade 3, with Grades 2 and 4 in the centre, and a small proportion of Grade 2 at the eastern-most extent. The Grade 2 land and potentially some of the Grade 3 land (depending on whether any of this is Grade 3a or 3b) is considered to be 'best and most versatile', and it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>The site is not within the Green Belt.</p> <p>There is a Village Green at Bushley Green, some 1,300m to the south-west.</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land if this is present. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |

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| infrastructure.  |     |  |  |
| <b>5: Natural Resources</b><br>Protect and enhance water and air quality.  | 0/- | <p><b>Water quality</b><br/>         There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>         The site is not within or immediately close to any AQMA, but there is an AQMA around Tewkesbury town centre, where air quality could be worsened if vehicles related to the site passed through or nearby.</p>  | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Tewkesbury AQMA.</p>  |
| <b>6: Climate Change and energy</b><br>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>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. Movement to processing plants will depend on whether this is on-site or elsewhere. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs. The site's location alongside the river Severn offers potential opportunities for water-borne transport, which could offer a less polluting alternative to road-based HGVs. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a rural location, some distance from the nearest major urban area.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <b>7: Flooding</b><br>Ensure inappropriate development does not occur in high-risk flood-prone   | -   | <p>Around 53% of the site is covered by floodzone 3, with around 66% falling within floodzone 2. This is unsurprising, given the site's location in the river Severn floodplain. Maps suggest there is no surface water flooding within the major part of the site, but there are small areas of 1 in 30, 1 in 100, and 1 in 1000 surface water flooding in the site's south-</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |



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| <p>areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p>   |            | <p>eastern extent, which joins with the Mythe Road.</p> <p>In a planning sense, sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended and, as such, the presence of the Flood Zones will attract a minor negative rating. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere. In the short to medium term, the site's ability to act as flood storage may be compromised by the need to ensure a workable site. This may be a relatively minor impact, but may still be felt until site restoration, which is likely to restore the site's flood-plain function.</p> |  |
| <p><b>8: Access to Services</b><br/>                 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>Twyning Bridleway 37 runs roughly north to south through the eastern 'arm' of the site boundary, in Gloucestershire, just east of the Mythe Brook. No public rights of way cross the main body of the site, although footpath 550 which follows the river Severn in this location appears to run for some 330m within the site's western boundary.</p> <p>This right of way may be compromised by the development of this site, and may require temporary or permanent closure or diversion, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>        | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>   | <p>The site is quite well isolated from built-up areas. There is a farm within the site, and some scattered farms and dwellings to the east of the site, along Bow Lane and Puckrup Lane. The Puckrup Hall golf course is also in close proximity.</p> <p>There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Those closest to the motorway may already have a higher degree of background noise and air pollution, which minerals extraction could add to and create a cumulative</p>   | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

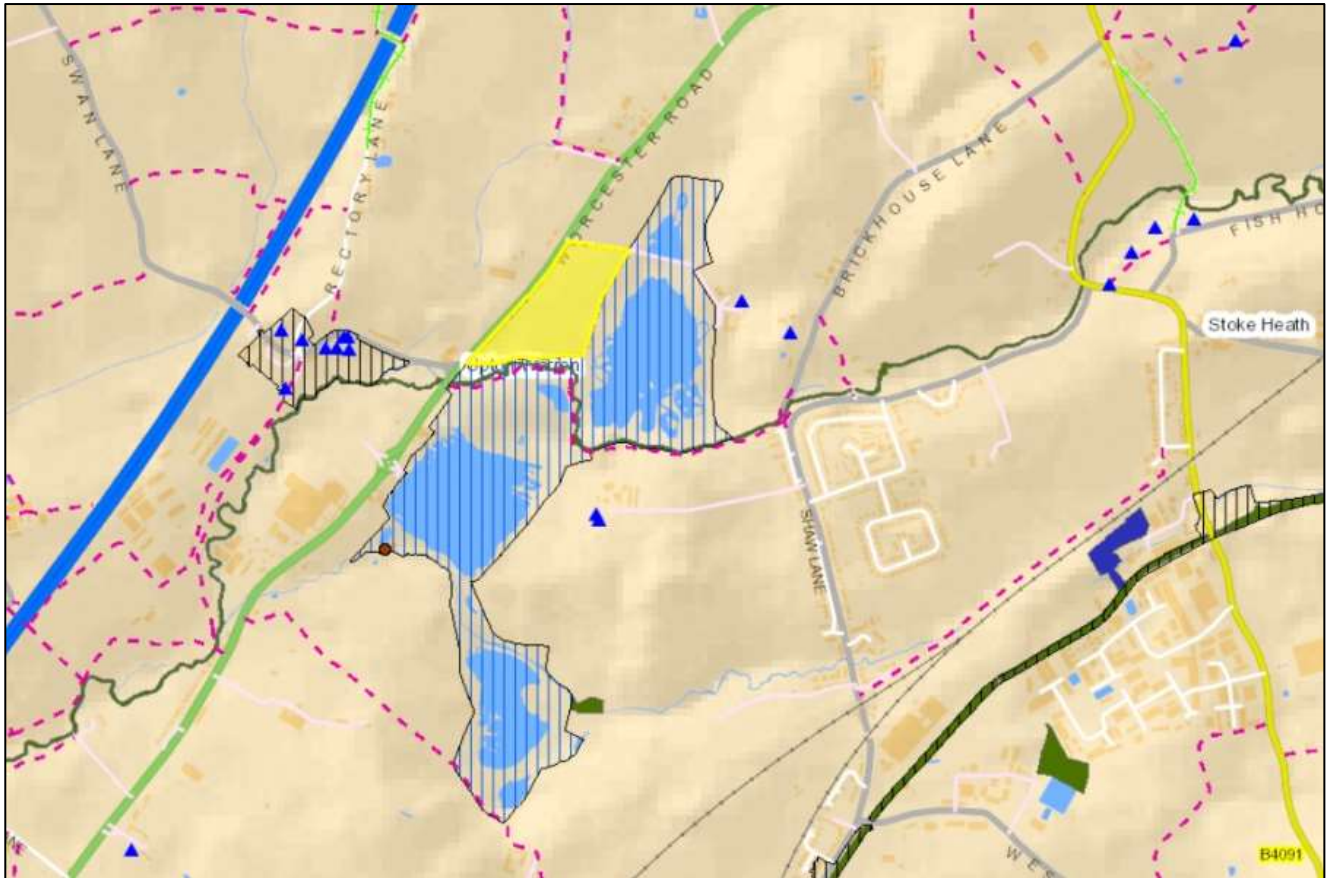


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|  |   | <p>impact.</p> <p>There are no major accident hazard pipelines within or near to the site.</p>  |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>       |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site, but the river Severn has been used for the transport of minerals between extraction and processing plants in the wider area, and there is an existing access onto the river Severn to the north within 1km of the site's river frontage. Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing. If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use. The site is within 1.2km (measured along roads) from junction 1 of the M50, which makes road transport a very likely option. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>The closest bus stop is on the A38, about 420m north of the site's eastern boundary. This serves Upton and Worcester. The village of Twyning has bus stops offering services to Tewkesbury and Gloucester, but this is 1,460m away to the east. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Severn, the potential for water-borne transport should be explored.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a</p>   | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative</p>   |

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| <p>knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>   |                                      | <p>growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>uses in county and district policy, including in neighbouring Tewkesbury borough and Gloucestershire county.</p>  |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy, including in neighbouring Tewkesbury borough and Gloucestershire county.</p> |

# Site 8: Greenfields Farm, Upton Warren

142,000t, 5Ha, access by road, processing on site.



To aid clarity, Green Belt is not shown. The entire site is within the Green Belt.

### Legend

|  |  |
|--|--|
|  | <b>Greenfields Farm, Upton Warren</b>          |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Local Geological Sites</b>                  |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Sites of Special Scientific Interest</b>    |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Waste Sites</b>                             |



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Ordnance Survey 100024230

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The site falls wholly within the 'Principal Timbered Farmlands' Landscape Type, and the MWI 19.2a Land Cover Parcel.</p> <p>Guidance on the 'Principal Timbered Farmlands' landscape type seeks to: maintain the tree cover character of hedgerow oaks, and enhance the age structure of the hedgerow oak population; conserve all ancient woodland sites and restock with locally occurring native species; seek to bring about coalescence of fragmented relic ancient woodlands; encourage the planting of new woodlands, reflecting the scale, shape and composition of the existing ancient woodland character, favouring oak as the major species; conserve and restore tree cover along water courses and streamlines; seek opportunities to enhance tree cover along highways and other non-farmed locations; conserve and restore the pattern and composition of the hedgerow structure through appropriate management, and replanting; conserve the organic pattern and character of the lane networks; and maintain the historic dispersed settlement pattern.</p> <p>Although there are some trees in the hedgerows around the site boundary, the site itself is a single large agricultural field. Phased working may allow some of these guidelines to be met, but minerals extraction will create visual intrusion in the short to medium term at the least.</p> <p>The site is a long way from both the Malvern Hills and the Cotswolds AONBs.</p> <p>There are no nationally-registered parks and gardens in close proximity to the site, nor any unregistered historic parks and gardens of local importance.</p> <p>Depending on how the site is developed, potential screening, and local</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|  |           | <p>topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way. The site is adjacent to a major road. There are very few residential properties immediately surrounding the site, but there are houses just the other side of the A38 north east of the site boundary. There are also various businesses and leisure uses in close proximity. The businesses and dwellings immediately on the A38 would probably experience some visual impact. There is a good degree of tree cover on the south side of the site, which could provide screening, but elsewhere such cover is patchy.</p>  |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>                 Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>--</p> | <p>The site directly abuts the Upton Warren Pools biological SSSI on its southern and eastern sides. There are no other SSSIs within 1.5km. Given that so much of the site adjoins the SSSI, there is a high likelihood of potentially negative impacts arising as a result of minerals extraction. The risks of dewatering, noise, vibration, visual disturbance of over-wintering birds, increased traffic, impact on visitor access to - and the recreational value of - the SSSI, implications for land-take for the Great Crested Newt population, elevated risks of pollution events and introduction of invasive species, etc., may be too great to be allow for adequate mitigation.</p> <p>There are four Local Wildlife Sites (LWS) within 1.5km of the site. The River Salwarpe Open Water – flowing LWS runs very close to the southern boundary of the site, less than 10m away at its closest. Grafton Manor Pool Open Water – standing LWS is some 1,310m to the north. Upton Warren LWS is 820m to the south. Land near Stoke Works LWS, designated for its Species Urban Open Vegetation habitats, is 1,415m to the south-east. Given the distances and intervening screening involved, it is probably only the river Salwarpe that could potentially suffer from significant negative effects.</p> <p>The Upton Warren Pit Local Geological Site is some 480m south-west of the site, but is separated by the pool and trees. It is considered unlikely that negative impacts would arise on the LGS as a result of extraction</p> | <p>Consideration should be given to avoiding extraction in the vicinity of sensitive sites, including the adjacent SSSI and nearby LWS – which may necessitate avoiding any development on this site. The adoption of buffer zones should be considered, but may not offer sufficient mitigation to avoid significant negative impacts.</p> |

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|  |  | <p>here.</p> <p>There are no areas of Ancient Semi-Natural Woodland within 1.5km of the site.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |  | <p>There are no Scheduled Ancient Monuments within 1.5km of the site.</p> <p>There are no listed buildings within the site or immediately surrounding it, but there are 28 within 1.5km. Most of these are listed at Grade II, but there is one Grade I listed building (the Church of St Michael, some 1,210m to the east of the site) and two Grade II* listed buildings (another Church of St Michael, 290m to the west, and Grafton Manor and Chapel adjoining to the south west, which is 1,490m to the north). Given that all of these buildings are at a reasonable distance from the site and enjoy a degree of screening from trees and built development, it is considered unlikely that minerals extraction could have significant negative visual impacts on any of their settings. There is some potential for noise to impact on their setting.</p> <p>The Upton Warren Conservation Area is about 140m west of the site, beyond the A38. Although this is relatively close, it is well screened by existing trees and built development, meaning that adverse visual impacts from minerals operations are unlikely, although noise could be experienced. The Worcester and Birmingham Canal Conservation Area runs within 1,240m to the south-east.</p> <p>The A38 follows the course of a Roman Road, and is therefore a corridor of high archaeological potential within which the proposed site is located.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby listed buildings and conservation area. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |
| <p><b>4: Material assets</b><br/>                 Ensure efficient use of land through safeguarding of mineral reserves, the</p>   |  | <p>The western-most part of the site, around 35% by area, falls within Grade 2 agricultural land. The majority of the site is Grade 3. More detailed mapping, to show whether the Grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. As there is grade 2 land, and potentially some grade 3a, which</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to</p>   |

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| <p>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>are both considered to be 'best and most versatile', it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>The site is wholly within the Green Belt. Whilst mineral extraction is not an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p> <p>There are no village greens around the site.</p>                                | <p>avoid the long-term loss of BMV. Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p>   |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | -   | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within an AQMA, but the Stoke Heath AQMA begins less than 1.2km away to the north, on the A38. Whilst some, possible most, road vehicle movements are likely to head south to access the motorway junction, if diesel lorries were to head north, this could contribute to air quality problems within the AQMA. The 'AQMA No 4 Worcester Road' is some 2.7km to the north-east, as the crow flies.</p>  | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Stoke Heath and No.4 Worcester Road AQMAs.</p>  |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable</p>                                    | -/? | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. Initial indications are that processing will be carried out on-site, thereby removing the potential for additional transport to an interim location prior to onward distribution. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources</p> |



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| <p>energy and low-carbon sources.</p>   |   | <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is close to the urban area of Bromsgrove town.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p>  | <p>used wherever possible.</p>  |
| <p><b>7: Flooding</b><br/>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>A small proportion of the site (c.3.5% by area) in the very south-west corner and along the southern boundary, is covered by Floodzone 3. Just over twice as much (c.7.8%) is covered by Floodzone 2 in the same vicinity. There is a small area of 1 in 30, 1 in 100, and 1 in 1000 surface water flooding in the very eastern part of the site. Immediately beyond the site's southern boundary is more extensive surface water flooding.</p> <p>In a planning sense, sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended and, as such, the presence of the Flood Zones will attract a minor negative rating. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere. In the short to medium term, the site's ability to act as flood storage may be compromised by the need to ensure a workable site. This may be a relatively minor impact, but may still be felt until site restoration, which is likely to restore the site's flood-plain function.</p> | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>  |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-</p>  | 0 | <p>No public rights of way cross the site or pass along its immediate boundaries. Footpath 580 runs within 20m of the south of the site at its closest point, but this is the other side of the river Salwarpe.</p> <p>The nature of any impact on this right of way is unclear, but given its location, it is not anticipated that any temporary or permanent closure or diversion would be required. It may be that minerals extraction could interfere with enjoyment of the right of way through visual intrusion, noise and/or air pollution, but this cannot be modelled at this stage, and</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p> |



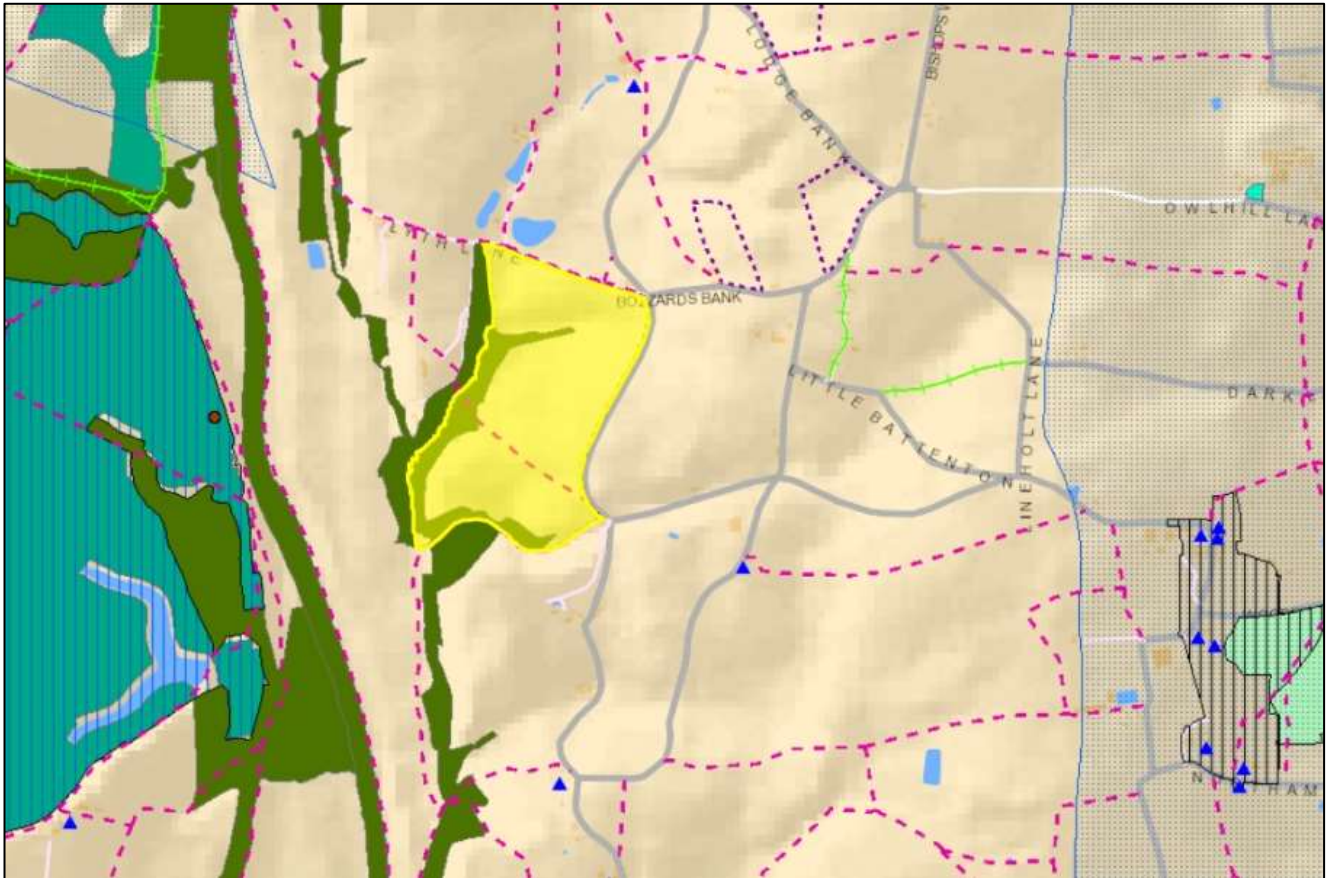
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| <p>economic status or educational attainment.</p>   |   | <p>the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  |  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>                               | - | <p>The site is adjacent to a major road. There are very few residential properties immediately surrounding the site, but there are houses just the other side of the A38 north east of the site boundary. There are also various businesses and leisure uses in close proximity. There is a good degree of tree cover on the south side of the site, which could provide screening, but elsewhere such cover is patchy, and there is the possibility of dust/noise pollution and vibration from operations and vehicle movements. This may be less noticeable close to the road, which is a busy principal A road, likely to produce higher levels of background noise at certain times. There is a risk that minerals extraction could act alongside the existing road traffic to produce cumulative noise, dust and vibration impacts.</p> <p>Aspirations for the restoration of the site are for a fishing lake, but there is insufficient certainty at this stage over whether or not this would happen. As such, it would not be appropriate to accord any health benefits to what could become an outdoor leisure opportunity.</p> <p>There are no major accident hazard pipelines within or near to the site. An electricity transmission line runs north-west to south-east some 500m north of the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site. The waste transfer station at Stoke Wharf is some 1.3km to the east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

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| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | - | <p>There are no railheads in close proximity to the site. The Worcester and Birmingham Canal is about 1,260m away to the east (as the crow flies). Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing. There is currently no large-scale facility to transfer bulk goods to the canal in this location, but this cannot be ruled out, and it may be possible to use smaller-scale loading/unloading facilities.</p> <p>If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use. The site is within 2.4km (measured along roads) from junction 5 of the M5, which makes road transport a very likely option. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>There is a bus stop immediately beyond the site's south-western corner, with services to Worcester, Droitwich, Bromsgrove and Birmingham. There is no railway station in close proximity.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the canal, the potential for water-borne transport should be explored.</p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                        |
| <p><b>I3: Provision of housing</b><br/>Provide decent affordable housing for all, of the right quality and tenure</p>  | + | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>   |

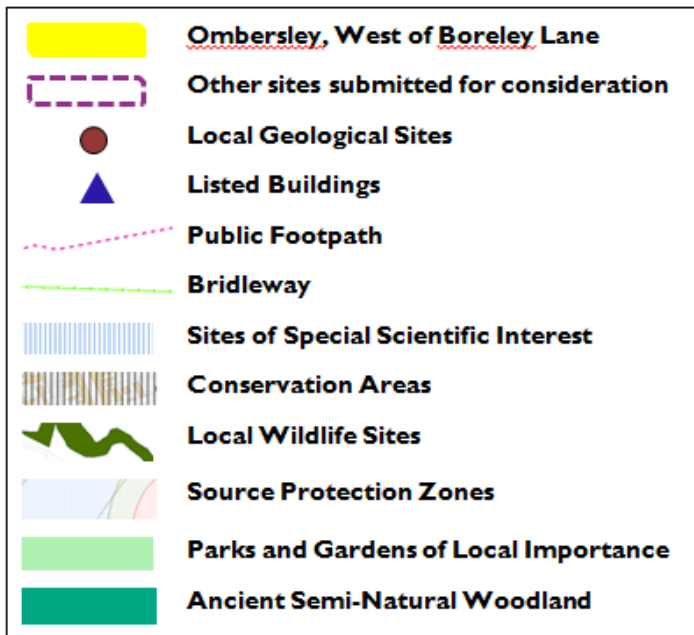
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| and for local needs,<br>in clean, safe and<br>pleasant local<br>environments. |  |  |  |
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# Site 9: Ombersley, West of Boreley Lane

Tonnage unknown, 25Ha, access unknown, processing unknown.



### Legend



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The site falls wholly within the 'Principal Settled Farmlands' Landscape Type, and the MW122.1d Land Cover Parcel. Guidance on the 'Principal Settled Farmlands' landscape type seeks to: conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture. Although some pasture would be lost through extraction (at least in the short-medium term), many of these guidelines could potentially be followed. However, minerals extraction would have a visual impact. Many vantage points around the site have far-reaching views, including to the Abberley Hills, which could be compromised by extraction.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in the immediate and surrounding area ('Ombersley, Lineholt West', 'Ombersley, Lineholt East', and 'Ombersley, Lineholt North'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is a long way from both the Malvern Hills and the Cotswolds AONBs.</p> <p>There are no nationally-registered parks and gardens in close proximity to the site. Wood House, Shrawley, an unregistered historic park and garden of local importance, is some 1,160m to the west, but given this garden's location on the opposite side of the river Severn and behind the dense extent of Shrawley wood, it is difficult to imagine any negative impacts being felt here as a result of minerals extraction at the site. Depending on how the site is developed, potential screening, and local</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |           | <p>topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using rights of way, and those using the river Severn.</p> <p>The site is in a relatively isolated rural location, but there are a handful of farms and houses around the immediate boundary, and one property inside the boundary in the far south-west corner. Existing tree belts to the west and south of the site may provide some screening if they were to remain and/or be enhanced.</p>   |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>--</p> | <p>There are no Sites of Special Scientific Interest (SSSI) within the site. Shrawley Wood biological SSSI is to the west of the river Severn, some 390m away. There are no other SSSIs within 1.5km.</p> <p>There is one Local Wildlife Site (LWS) within the site, and a further four within 1.5km of the site boundary. Boreley Bank and Winnall Coppice is a long, linear LWS recognised for its Broadleaved Woodland Wet Woodland Marshy Grassland habitats. This LWS covers the wooded area which extends into the site along the site's western and southern boundaries and which also projects into the centre of the northern part of the site. Given the presence of BAP quality woodland on site, and the close proximity to standing water, the likelihood of encountering protected species issues here (with consequences for requiring mitigation/compensation strategies) is very high and may include great crested newt, badger, bat and possibly dormouse. Mitigation strategies may impact the net area capable of extraction.</p> <p>The river Severn is an Open Water – flowing LWS and is about 245m to the west of the site. Shrawley Wood Complex, a Broadleaved Woodland LWS, is 310m to the west. Dick Brook, an Open Water – flowing LWS, is 630m to the west. Shotgrove Coppice is a Broadleaved Woodland LWS, some 1,440m to the south-west. Given the distances involved, and that some degree of protection is recommended in the western part of the site, it is not considered likely that significant negative impacts will arise in relation to these sites.</p> | <p>Consideration should be given to avoiding extraction in the vicinity of sensitive sites, including by avoiding Boreley Bank and Winnall Coppice and potentially allocating a buffer zone to ensure its protection. Impacts on other sensitive receptors also need to be taken into account.</p> |

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|  |     | <p>There are three ponds just beyond the northern site boundary, within 30m, 50m, and 160m, respectively.</p> <p>The Shrawley Woods High Quarry Local Geological Site is about 480m to the west, the other side of the river Severn. Negative impacts are considered unlikely, due to the distance involved, and the fact that the LGS is effectively surrounded by the dense woodland of Shrawley Wood.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, but parts of five ASNWs are found within 1.5km of the site. Winnall Coppice is 360m to the north-west. Part of Shrawley Wood is 390m to the west. An unnamed linear ASNW runs along the Severn, some 675m south of the site. Lower Astley Wood is 795m to the north-west, with Upper Astley Wood 1,310m away. Shotgrove Coppice is 1,430m to the south-west.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | -/? | <p>There are no Scheduled Ancient Monuments within 1.5km of the site. The Churchyard cross in St Mary's Church, Shrawley, is just beyond this distance away to the south-west.</p> <p>There are 18 listed buildings within 1.5km of the site, all of which are listed at Grade II. The closest are Tytchney Gables, 360m to the east, and 'Wyneyards', 450m to the north. Desktop analysis suggests there is likely to be only limited inter-visibility between the site and either Tytchney gables or Wyneyards, due to local topography and established hedgelines. Cumulative impacts could also arise if nearby sites ('Ombersley, Lineholt West', 'Ombersley, Lineholt East', and 'Ombersley, Lineholt North') were to be developed at the same time, although no significant effects are considered likely to arise.</p> <p>The only Conservation Area within 1.5km of the site is at Northampton, some 1,360m to the east.</p> <p>The site is immediately east of a valley with a medieval mill site and its associated infrastructure. The setting is highly sensitive to change.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby listed buildings and conservation area. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |



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| <p><b>4: Material assets</b><br/>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>The site includes three different grades of agricultural land. The centre and south-west of the site falls within grade 4. The north of the site is grade 2, and the south-east is grade 1. In total, the proportion of 'best and most versatile land' within the site amounts to around 53%. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p>   | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site. The closest Source Protection Zones are two areas of Zone 3: one 530m to the north-west, and one 930m to the east.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved north on the A449, then depending on routes chosen, there is potential to impact on the Kidderminster Ring Road AQMA. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Ombersley, Lineholt West', 'Ombersley, Lineholt East', and 'Ombersley, Lineholt North' which would also be likely to use HGVs and to pass along largely the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Kidderminster Ring Road AQMA.</p>   |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of</p>   | <p>-/?</p> | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will</p>   | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the</p>   |



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| <p>and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>   |            | <p>be excavated by diesel-powered equipment, and processed by diesel and electric plant. The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a relatively remote rural location, some distance from any urban area. Its proximity to the river Severn may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p>   | <p>opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>-/0</p> | <p>Floodzone 3 extends to the site's south-western boundary, and may also extend fractionally into the site (this would require more accurate mapping to determine). Floodzone 2 does enter the site in the south-west corner, but only covers around 2% of the site area, in a part of the site that is currently heavily wooded. There is a thin linear section of 1 in 1000 surface water flooding extending into the northern half of the site. There are more extensive areas of 1 in 100 and 1 in 1000 surface water flooding immediately beyond the site's western and southern boundaries.</p> <p>In a planning sense, sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended and, as such, the presence of the Flood Zones will attract a minor negative rating. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere. In the short to medium term, the site's ability to act as flood storage may be compromised by the need to ensure a workable site. This may be a relatively minor impact, but may still be felt until site</p> | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

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|   |   | restoration, which is likely to restore the site's flood-plain function.  |  |
| <p><b>8: Access to Services</b><br/>                 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>Footpath 514 runs through the width of the site, north-west to south-east. Footpaths 509, 510, and 511 all follow the site's northern boundary at some point. Footpath 585 follows the site's southern boundary.</p> <p>It is likely, given that footpath 514 directly crosses the entire site, some degree of temporary or permanent closure or diversion may be required, but this will depend on the circumstances. It may be that minerals extraction could interfere with enjoyment of the rights of way running through and around the site through visual intrusion, noise and/or air pollution, but this cannot be modelled at this stage, and the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | - | <p>The site is in an isolated rural location, away from any dense residential areas. There are, however, scattered individual farms and dwellings in the area. There is a dwelling just beyond the north-eastern corner of the site, on the opposite side of Lyth Lane, and another on the opposite side of the unnamed road that forms the site's eastern boundary. There is a building within the site boundary in the very south-western corner, but it is unclear if this is occupied. In the same area there is a cottage and a farm, both outside the site boundary and behind some belts of trees.</p> <p>There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Ombersley, Lineholt West', 'Ombersley, Lineholt East', and 'Ombersley, Lineholt North'.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

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|  |   | <p>needed in planning and operations to ensure safety is maintained.</p> <p>An electricity transmission line bisects the site roughly north to south.</p>  |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site. The thermal treatment site off Owlhill Lane is some 1,470m to the east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>       |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>The river Severn is 250m away at its closest point, and may offer opportunities to move material by water. There are not currently any loading facilities in the area. Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A449 is an advisory road for HGV movements, and so is appropriate for this use. However, the smaller roads that would need to connect the site to the A449 are not advisory routes.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ombersley, Lineholt West', 'Ombersley, Lineholt East', and 'Ombersley, Lineholt North', all of which would also be likely to see HGV movements along the same road network.</p> <p>The site's rural location means it is some distance from the nearest bus stop, which is on the A449, some 2.7km to the east, with buses serving Worcester, Kidderminster Stourport, and Bewdley. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Severn, the potential for water-borne transport should be explored.</p> |









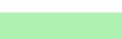
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| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |

# Site 10: Ombersley, Lineholt West

Unknown tonnage, 2Ha, access unknown, processing unknown.



### Legend

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|  | <b>Ombersley, Lineholt West</b>                |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Source Protection Zones</b>                 |
|  | <b>Parks and Gardens of Local Importance</b>   |



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The site falls wholly within the 'Principal Settled Farmlands' Landscape Type, and the MW122.3b Land Cover Parcel. Guidance on the 'Principal Settled Farmlands' landscape type seeks to: conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture.</p> <p>It does not appear that there is currently pasture on this site, so no pasture is likely to be lost through extraction, and many of these guidelines could potentially be followed. However, minerals extraction would have a visual impact. Many vantage points around the site have far-reaching views, including to the Abberley and Malvern Hills, which could be compromised by extraction.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in the immediate and surrounding area ('Ombersley, West of Boreley Lane', 'Ombersley, Lineholt East', and 'Ombersley, Lineholt North'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is a long way from both the Malvern Hills and the Cotswolds AONBs.</p> <p>There are no nationally-registered parks and gardens in close proximity to the site. Woodfield House, Northampton, Ombersley, and unregistered historic park and garden of local importance, is some 1,380m to the south-east, too far away to mean that significant negative effects are likely to occur as a result of minerals extraction.</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is in a relatively isolated rural location. There is a building adjoining the south-western boundary, and a couple of houses along Bozzards Bank – both within 40m of the boundary – to the south-east. There does not appear to be any significant tree belts between the site and these buildings. There are other scattered farms and dwellings in most directions within 500m of the site, which could experience negative visual impact from extraction.</p>   |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no Sites of special Scientific Interest (SSSI) within the site. Shrawley Wood biological SSSI is the closest, at around 1,260m away to the west, the other side of the river Severn. Given the distance involved, and the presence of intervening features including the river Severn and belts of trees, it is considered unlikely that significant negative effects would arise on the SSSI as a result of minerals extraction here.</p> <p>There are no Local Wildlife Sites (LWS) within or close to the site. The closest is Boreley Bank and Winnall Coppice Broadleaved Woodland Wet Woodland Marshy Grassland LWS, 370m to the west. Other LWS within 1.5km are the river Severn Open Water – flowing LWS, about 1,090m west; Dick Brook Open Water – flowing LWS, 1,140m to the west; Shrawley Wood Complex, a Broadleaved Woodland LWS, about 1,290m to the west; and Bishop's Wood Broadleaved Woodland LWS, 1,450m north-east. Given the distances involved and intervening features, it is considered unlikely that significant negative impacts would arise on any LWS. There may be some cumulative impacts as a result of development at the nearby 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', and 'Ombersley, Lineholt North'. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population</p> | <p>Consideration should be given to avoiding impacts on sensitive receptors.</p> |

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|  |          | <p>numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Although none of the sites named above are particularly close to this site, meaning that significant cumulative effects are not anticipated, further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are three ponds to the west of the site, within 340m, 420m, and 470m, respectively.</p> <p>The Shrawley Woods High Quarry Local Geological Site is about 1,260m to the west, the other side of the river Severn. Negative impacts are considered unlikely, due to the distance involved, and the fact that the LGS is effectively surrounded by the dense woodland of Shrawley Wood.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, but parts of five ASNWs are found within 1.5km. Winnall Coppice is 850m west; part of Shrawley Wood is 1,220m to the west; Lower Astley Wood is 1,260m west; an unnamed ASWN is 1,420m north; an unnamed ASNW that runs partly alongside the river Severn is 1,460 south-west; and Bishops Wood is 1,480m north east.</p> |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed</p> | <p>0</p> | <p>There are no Scheduled Ancient Monuments within 1.5km of the site.</p> <p>There are 15 listed buildings within 1.5km of the site, all of which are listed at Grade II. The closest is 'Wyneyards', 310m to the north. Desktop research suggests there is not likely to be significant inter-visibility between Wyneyards and the site, due to local topography and hedgerows, but this would depend on the nature and height of operations at the site. Cumulative impacts could also arise if nearby sites</p>   | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby listed buildings and conservation area. Consideration should be given to limiting any activities that could</p> |



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| <p>and resource-efficient development which respects local character and distinctiveness.</p>   |   | <p>('Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', and 'Ombersley, Lineholt North') were to be developed at the same time.</p> <p>The only Conservation Area within 1.5km of the site is at Northampton, some 1,120m to the east.</p> <p>The setting of the site is associated with medieval ridge and furrow earthworks and inherited medieval landscape character.</p>  | <p>compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p>  |
| <p><b>4: Material assets</b><br/>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 entire site falls within grade 2 agricultural land. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>  | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | - | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site. The closest Source Protection Zone is Zone 3, some 710m to the east.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved north on the A449, then depending on routes chosen, there is potential to impact on the Kidderminster Ring Road AQMA. Any negative air quality impacts could be worsened through cumulative emissions if this</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Kidderminster Ring Road AQMA.</p>   |

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|  |            | <p>site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', and 'Ombersley, Lineholt North', which would also be likely to use HGVs and to pass along the same road network.</p>   |  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant. The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a relatively remote rural location, some distance from any urban area. Its proximity to the river Severn may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to</p>                   | <p>0</p>   | <p>No part of the site is within or in close proximity to a floodzone. Floodzones 2 and 3, associated with the river Severn, are some 880m to the west. Maps suggest there is no surface water flooding within the site.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

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| <p>surface water flooding in all other areas.</p>   |            |   |  |
| <p><b>8: Access to Services</b><br/>                 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>0/?</p> | <p>No public rights of way pass through the site or along its boundaries, but footpath 521 starts/ends immediately outside the site's south-western corner.<br/>                 It is not considered likely that any temporary or permanent closure or diversion may be required, but this will depend on the circumstances. It may be that minerals extraction could interfere with enjoyment of the rights of way running through and around the site through visual intrusion, noise and/or air pollution, but this cannot be modelled at this stage, and the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>   | <p>The site is in a relatively isolated rural location. There is a building adjoining the south-western boundary, and a couple of houses along Bozzards Bank – both within 40m of the boundary – to the south-east. There does not appear to be any significant tree belts between the site and these buildings. There are other scattered farms and dwellings in most directions within 500m of the site.<br/>                 There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors.<br/><br/>                 Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', or 'Ombersley, Lineholt North'.<br/><br/>                 There are no major accident hazard pipelines or electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site. The thermal treatment site off Owlhill Lane is some 1,190m to the east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>       |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>The river Severn is 1,050m away at its closest point, and may offer opportunities to move material by water. There are not currently any loading facilities in the area. Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A449 is an advisory road for HGV movements, and so is appropriate for this use. However, the smaller roads that would need to connect the site to the A449 are not advisory routes.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', or 'Ombersley, Lineholt North', all of which would also be likely to see HGV movements along the same road network.</p> <p>The site's rural location means it is some distance from the nearest bus stop, which is on the A449, some 2.7km to the east, with buses serving Worcester, Kidderminster Stourport, and Bewdley. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Severn, the potential for water-borne transport should be explored.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven</p>  | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                               |









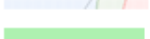
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| <p>economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>  |                                      | <p>non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 11: Ombersley, Lineholt East

Unknown tonnage, 3Ha, access unknown, processing unknown.



## Legend

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|  | <b>Ombersley, Lineholt East</b>                |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Source Protection Zones</b>                 |
|  | <b>Parks and Gardens of Local Importance</b>   |



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Ordnance Survey 100024230

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The site falls wholly within the 'Principal Settled Farmlands' Landscape Type, and the MW122.3b Land Cover Parcel. Guidance on the 'Principal Settled Farmlands' landscape type seeks to: conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture. Desktop research suggests the site is in arable, rather than pastoral use, so no pasture is likely to be lost through extraction, and many of these guidelines could potentially be followed. However, minerals extraction would have a visual impact. Many vantage points around the site have far-reaching views, including to the Abberley and Malvern Hills, which could be compromised by extraction.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in the immediate and surrounding area ('Ombersley, West of Boreley Lane', 'Ombersley, Lineholt West', and 'Ombersley, Lineholt North'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is a long way from both the Malvern Hills and the Cotswolds AONBs.</p> <p>There are no nationally-registered parks and gardens in close proximity to the site. Woodfield House, Northampton, Ombersley, and unregistered historic park and garden of local importance, is some 1,400m to the south-east. Given the distance involved, topography, and intervening vegetation, it is not considered likely that significant negative visual impact would be experienced by Woodfield House as a result of</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |



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|   |          | <p>minerals extraction at this site.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is in a relatively isolated rural location. There is one dwelling (Lodge Bank) adjoining the northern boundary, which is likely to experience visual impact. There are also scattered dwellings along Blacksmiths Bank, Bishops Wood Lane, and Lineholt Lane to the south and, especially, east of the site. Ombersley Golf Course is the other side of Lodge Bank to the north.</p>  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no Sites of special Scientific Interest (SSSI) within the site. Shrawley Wood biological SSSI is the closest, at around 1,470m away to the west, the other side of the river Severn. Given the distance involved, and the presence of intervening features including the river Severn and belts of trees, it is considered unlikely that significant negative effects would arise on the SSSI as a result of minerals extraction here. The site falls within a SSSI risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or close to the site. The closest is Boreley Bank and Winnall Coppice Broadleaved Woodland Wet Woodland Marshy Grassland LWS, 620m to the west. Other LWS within 1.5km are the river Severn Open Water – flowing LWS, about 1,320m west; Dick Brook Open Water – flowing LWS, 1,400m to the west; Shrawley Wood Complex, a Broadleaved Woodland LWS, about 1,500m to the west; and Bishop's Wood Broadleaved Woodland LWS, 1,260m north-east. Given the distances involved and intervening features, it is considered unlikely that significant negative impacts would arise on any LWS. There may be some cumulative impacts as a result of development at the nearby 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt West', and 'Ombersley, Lineholt North', although there are no particular wildlife sites which are obviously at risk of such cumulative impacts. In general terms, cumulative working, even if phased over the plan period, may increase the risk of habitat network severance.</p> | <p>Consideration should be given to avoiding impacts on sensitive receptors.</p> |



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|  |          | <p>Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>The Shrawley Woods High Quarry Local Geological Site is about 1,500m to the west, the other side of the river Severn. Negative impacts are considered unlikely, due to the distance involved, and the fact that the LGS is effectively surrounded by the dense woodland of Shrawley Wood.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, but parts of four ASNWs are found within 1.5km. Winnall Coppice is 1,100m west; Bishops Wood is 1,270m north east; an unnamed ASWN is 1,330m north; and part of Shrawley Wood is 1,480m to the west. Lower Astley Wood is just beyond 1.5km to the west.</p> <p>There are three ponds to the west of the site, within 680m, 600m, and 730m, respectively.</p> |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-</p> | <p>0</p> | <p>There are no Scheduled Ancient Monuments within 1.5km of the site.</p> <p>There are 16 listed buildings within 1.5km of the site, all of which are listed at Grade II. The closest is 'Wyneyards', 460m to the north-west. Desktop research suggests there is not likely to be significant inter-visibility between Wyneyards and the site, due to local topography and hedgerows, but this would depend on the nature and height of operations at the site. Cumulative impacts could also arise if nearby sites ('Ombersley, West of Boreley Lane', 'Ombersley Lineholt West', and</p>  | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby listed buildings and conservation area. Consideration should be given to limiting any activities that could compromise their setting by avoiding</p> |

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| <p>efficient development which respects local character and distinctiveness.</p>  |           | <p>'Ombersley, Lineholt North') were to be developed at the same time.</p> <p>The only Conservation Area within 1.5km of the site is at Northampton, some 1,030m to the south-east.</p> <p>The setting of the site is associated with medieval ridge and furrow earthworks and inherited medieval landscape character.</p>  | <p>working certain areas, or by adopting appropriate screens and buffer zones.</p>   |
| <p><b>4: Material assets</b><br/>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>The entire site falls within grade 1 agricultural land. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p>  | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site. The closest Source Protection Zone is Zone 3, some 440m to the east.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved north on the A449, then depending on routes chosen, there is potential to impact on the Kidderminster Ring Road AQMA. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Ombersley, West of Boreley</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Kidderminster Ring Road AQMA.</p>   |

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|  |     | Lane', 'Ombersley Lineholt West', and 'Ombersley, Lineholt North', which would also be likely to use HGVs and to pass along the same road network.  |  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a relatively remote rural location, some distance from any urban area. Its proximity to the river Severn may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to</p>                   | 0   | <p>No part of the site is within or in close proximity to a floodzone. Floodzones 2 and 3, associated with the river Severn, are some 1,130m to the west. Maps suggest there is no surface water flooding within the site.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

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| surface water flooding in all other areas.   |     |  |  |
| <b>8: Access to Services</b><br>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/? | <p>No public rights of way pass through the site or along its boundaries. Bridleway 555 runs south from just beyond the south-eastern site boundary, on the other side of Blacksmiths Bank.</p> <p>It is considered unlikely that any temporary or permanent closure or diversion would be required, but this will depend on the circumstances, and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <b>9: Health and amenity</b><br>Improve the health and well-being of the population and reduce inequalities in health.   | -   | <p>The site is in a relatively isolated rural location. There is one dwelling adjoining the northern boundary, of Lodge Bank. There are also scattered dwellings along Blacksmiths Bank, Bishops Wood Lane, and Lineholt Lane to the south and, especially, east of the site. Ombersley Golf Course is the other side of Lodge Bank to the north. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt West', or 'Ombersley, Lineholt North'.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <b>10: Waste</b><br>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3)   | 0   | <p>There are no waste sites within or in close proximity to the site. The thermal treatment site off Owlhill Lane is some 870m to the east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

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| <p>recycling and composting, 4) recovery, 5) disposal.</p>  |          |   |  |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>  | <p>-</p> | <p>There are no railheads in close proximity to the site. The river Severn is 1,350m away at its closest point, and may offer opportunities to move material by water. There are not currently any loading facilities in the area. Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing. If road transport is used, the A449 is an advisory road for HGV movements, and so is appropriate for this use. However, the smaller roads that would need to connect the site to the A449 are not advisory routes. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt West', or 'Ombersley, Lineholt North', all of which would also be likely to see HGV movements along the same road network. The site's rural location means it is some distance from the nearest bus stop, which is on the A449, some 2.4km to the east, with buses serving Worcester, Kidderminster Stourport, and Bewdley. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Severn, the potential for water-borne transport should be explored.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and</p> | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                               |

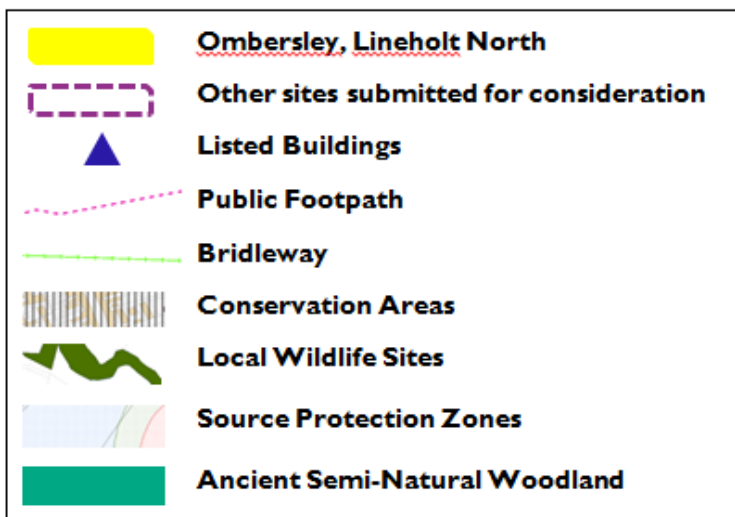
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| rural.   |   |  |   |
| <p><b>13: Provision of housing</b><br/>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments.</p> | + | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 12: Ombersley, Lineholt North

Unknown tonnage, 11Ha, access unknown, processing unknown



### Legend



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The site falls wholly within the 'Principal Settled Farmlands' Landscape Type, and the MW122.3b Land Cover Parcel. Guidance on the 'Principal Settled Farmlands' landscape type seeks to: conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture. The Deliverability Assessment suggests the land is predominantly in pastoral use, so it is likely that at least some pasture would be lost through extraction. Notwithstanding this, many of the landscape guidelines could potentially be followed. However, minerals extraction would have a visual impact. Many vantage points around the site have far-reaching views, including to the Abberley and Malvern Hills, which could be compromised by extraction.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in the immediate and surrounding area ('Ombersley, West of Boreley Lane', 'Ombersley, Lineholt East', and 'Ombersley, Lineholt West'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is a long way from both the Malvern Hills and the Cotswolds AONBs.</p> <p>There are no nationally-registered parks and gardens in close proximity to the site. Woodfield House unregistered historic park and garden of local importance is within 1,300m to the south-east. Given the distance involved, topography, and intervening vegetation, it is not considered likely that significant negative visual impact would be experienced by</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |



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|   |          | <p>Woodfield House as a result of minerals extraction at this site.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is in a relatively isolated rural location. There are no dwellings within or immediately adjoining the site. The site's eastern boundary and part of the site's northern and southern boundaries are shared with Ombersley Golf Course.</p> <p>The closest dwelling is some 150m west of the site's south-western corner. There are scattered groups of dwellings and farms around the junction of Bishops Wood Road and Owlhill Lane, beginning some 280m south-east of the site, and around Winnall Lane, beginning some 100m to the north.</p>  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no Sites of special Scientific Interest (SSSI) within the site. Shrawley Wood biological SSSI is just beyond 1.5km away at its closest, the other side of the river Severn. Given the distance involved, and the presence of intervening features including the river Severn and belts of trees, it is considered unlikely that significant negative effects would arise on the SSSI as a result of minerals extraction here. The site falls within a SSSI risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or close to the site. The closest is Bishop's Wood Broadleaved Woodland LWS, 480m north-east. Other LWS within 1.5km are the Boreley Bank and Winnall Coppice Broadleaved Woodland Wet Woodland Marshy Grassland LWS, 790m to the west; river Severn Open Water – flowing LWS, about 1,050m west; Dick Brook Open Water – flowing LWS, 1,260m to the west; and Shrawley Wood Complex, a Broadleaved Woodland LWS, about 1,490m to the west. Given the distances involved and intervening features, it is considered unlikely that significant negative impacts would arise on any LWS. There may be some cumulative impacts as a result of development at the nearby 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', and 'Ombersley, Lineholt West', although there are no particular</p> | <p>Consideration should be given to avoiding impacts on sensitive receptors.</p> |

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|  |            | <p>wildlife sites which are obviously at risk of such cumulative impacts. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, but parts of seven ASNWs are found within 1.5km. An unnamed ASWN is 640m north; Bishops Wood is 710m north east; Winnall Coppice is 800m west; another unnamed ASNW is 1,090m north-west; Lower Astley Wood is 1,250m to the west; yet another unnamed ASNE is 1360m north-west, the other side of the river Severn; and part of Shrawley Wood is 1,450m to the west.</p> <p>There are three ponds to the south-west of the site, within 580m, 670m, and 720m, respectively.</p> |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and</p> | <p>-/?</p> | <p>There are no Scheduled Ancient Monuments within 1.5km of the site.</p> <p>There are 16 listed buildings within 1.5km of the site, all of which are listed at Grade II. The closest are 'The Bumble Hole' and the 'Barn about 25 metres east of the Bumble Hole', both around 170m to the north. Inter-visibility between the site and these buildings is unlikely, as there is a wooded ridge of higher ground between them, but this may depend on</p>   | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby listed buildings and conservation area. Consideration should</p> |

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| <p>deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p>   |          | <p>the height of any workings. The proximity of these assets may mean that their setting is compromised in other ways, for example through dust and noise emissions, or disturbance from vehicle movements. 'Wyneyards' is the next closest listed building, at around 350m to the south-west, but this too is largely screened from the site by a wooded ridge. Cumulative impacts could also arise if nearby sites ('Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', and 'Ombersley, Lineholt West') were to be developed at the same time.</p> <p>The only Conservation Area within 1.5km of the site is at Northampton, some 1,410m to the south-east.</p> <p>The setting of the site is associated with medieval ridge and furrow earthworks and inherited medieval landscape character.</p> | <p>be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p>   |
| <p><b>4: Material assets</b><br/>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>The majority of the site, in the central, north and west areas (c. 68%) falls within grade 2 agricultural land. The remainder falls into grade 1. As both grades 1 and 2 are considered to be 'best and most versatile agricultural land', it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>  | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p> | <p>Water quality<br/>There are no Source Protection Zones within or in close proximity to the site. The closest Source Protection Zone is Zone 3, some 600m to the east.</p>   | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce</p>  |

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|   |            | <p><b>Air quality</b><br/>                 The site is not within or close to an AQMA. If the material is moved north on the A449, then depending on routes chosen, there is potential to impact on the Kidderminster Ring Road AQMA. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', and 'Ombersley, Lineholt West', which would also be likely to use HGVs and to pass along the same road network.</p>  | <p>air pollution should be taken. Consideration should be given to potential impacts on the Bromsgrove and M42 J1 AQMAs.</p>   |
| <p><b>6: Climate Change and energy</b><br/>                 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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.<br/>                 The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.<br/>                 There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a relatively remote rural location, some distance from any urban area. Its proximity to the river Severn may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.<br/>                 There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.<br/>                 All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |

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| <p><b>7: Flooding</b><br/>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 part of the site is within or in close proximity to a floodzone. Floodzones 2 and 3, associated with the river Severn, are some 900m to the west. Maps suggest there are no areas of surface water flooding within the site.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |
| <p><b>8: Access to Services</b><br/>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>Footpath 518 passes through the site from west to east in the site's northern-most quarter. Footpath 520 runs in part immediately outside the site's southern boundary.<br/>It may be that minerals extraction could interfere with enjoyment of the rights of way running through and around the site through visual intrusion, noise and/or air pollution, and some element of temporary or permanent closure or diversion may be required, but this will depend on the circumstances and cannot be modelled at this stage. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.<br/><br/>If the adjacent golf course is considered as a "local facility", then this too could be adversely affected by noise, dust, visual intrusion, etc.</p> | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | -  | <p>The site is in a relatively isolated rural location. There are no dwellings within or immediately adjoining the site. The site's eastern and part of the site's northern and southern boundaries are shared with Ombersley Golf Course.<br/>The closest dwelling is some 150m west of the site's south-western corner. There are scattered groups of dwellings and farms around the junction of Bishops Wood Road and Owlhill Lane, beginning some 280m south-east of the site, and around Winnall Lane, beginning some 100m to the north.</p>  | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

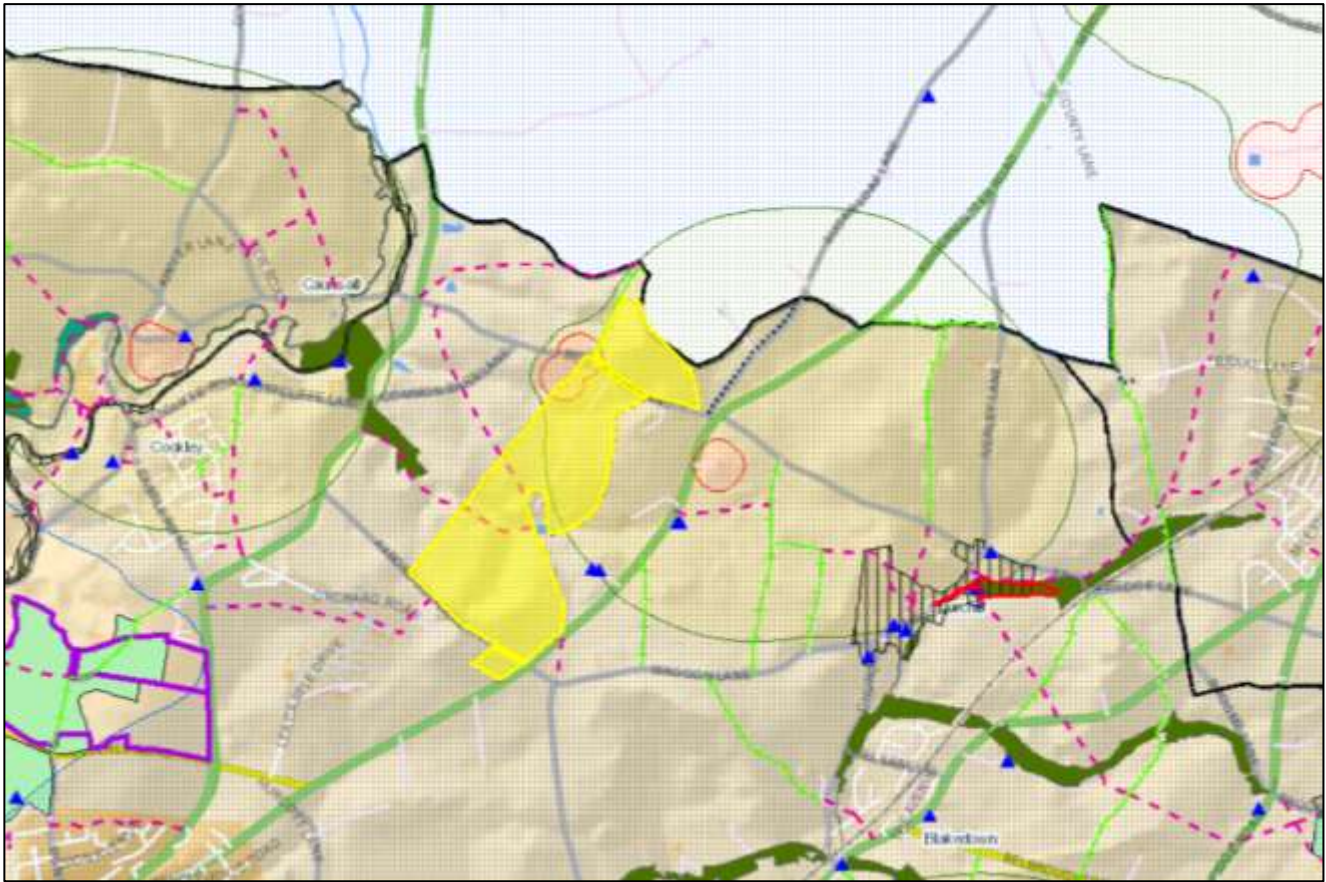
|  |          |   |  |
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|  |          | <p>There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', or 'Ombersley, Lineholt West'.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site.</p>  |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>There are no waste sites within or in close proximity to the site. The thermal treatment site off Owlhill Lane is some 1,090m to the east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>       |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | <p>-</p> | <p>There are no railheads in close proximity to the site. The river Severn is 1,050m away at its closest point, and may offer opportunities to move material by water. There are not currently any loading facilities in the area. Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A449 is an advisory road for HGV movements, and so is appropriate for this use. However, the smaller roads that would need to connect the site to the A449 are not advisory routes.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ombersley, West of Boreley Lane', 'Ombersley Lineholt East', or 'Ombersley, Lineholt West', all of which would also be likely to see HGV movements along the same road network.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Severn, the potential for water-borne transport should be explored.</p> |

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|  |          | <p>The site's location rural location means it is some distance from the nearest bus stop, which is on the A449, some 2.8km to the east, with buses serving Worcester, Kidderminster Stourport, and Bewdley. There are no railways stations in close proximity.</p>   |  |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |



# Site 13: Wolverley Glebe

Unknown tonnage, 80Ha, access unknown, processing unknown



To aid clarity, Green Belt is not shown. The entire site is within the Green Belt.

## Legend

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|  | <b>Wolverley Glebe</b>                         |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Scheduled Ancient Monuments</b>             |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Source Protection Zones</b>                 |
|  | <b>Parks and Gardens of Local Importance</b>   |
|  | <b>Ancient Semi-Natural Woodland</b>           |





| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls within the 'Sandstone Estatelands' landscape type.</p> <p>Guidance on the Sandstone Estatelands landscape type seeks to: conserve and restore the distinctive hedgerow pattern with priority given to primary hedgerows; identify opportunities for further large scale planting of woodlands and tree belts to strengthen the regular patterns of the landscape; conserve and restore parklands; conserve and enhance tree cover along watercourses; conserve the integrity of estate villages; promote the creation and appropriate management of natural vegetation communities along highways and other non-farmed areas; and promote the development of wide field margins for wildlife benefit.</p> <p>It is unclear how these landscape characteristics could be maintained and enhanced during minerals operations, but a phased approach could help to deliver these objectives. They could also help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There may be some potential for cumulative landscape impacts to arise as a result of development of this site alongside those sites to the south ('Land north of Wolverley Road' or 'Strong Farms' and 'Land South of Wolverley Road'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The south west of the site falls within Land Cover Parcel (LCP) KS22.1b, and the north-east of the site falls within LCP KS22.1i.</p> <p>Sionhill House is an unregistered historic park and garden of local importance within 1,200m of the south-west of the site, but is separated by established buildings and tree cover at the Lea Castle site.</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>The site is not within or in close proximity of an Area of Outstanding Natural Beauty.</p> <p>Depending on the way the site is developed and potential screening, some localised visual impact may be expected. Receptors could include the scattered farms and dwellings around the site's boundary, as well as road users and users of the rights of way that currently pass alongside and through the site.</p>  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>-</p> | <p>There are no SSSIs within or in close proximity to the site, although there are two sites to the south within 1.5km: Hurcott &amp; Podmore Pools biological SSSI 1,000m away to the south, and Hurcott Pasture biological SSSI 1,420m to the south. Given the distances involved, and that they are separated by (variously) combinations of roads, built development, and extensive bands of trees, it is considered unlikely that significant negative effects would be experienced as a result of minerals extraction at the site. All of the site falls within one or another of two 'SSSI impact risk zones'. The site adjoins the border between Wyre Forest and South Staffordshire, but there are no SSSIs in south Staffordshire district within 1.5km. The nearest geological SSSI over the border is Kinver Edge, some 4.2km to the north-west.</p> <p>The 'Island Pool' Local Wildlife Site (LWS) is characterised by Open Water, Swamp Marshland, Wet Woodland, and Broadleaved Woodland, and is some 230m to the west. There is little by way of intervening development of woodland between this LWS and the site, so there may be a pathway for negative impacts to arise.</p> <p>Caunsall Marsh LWS is just beyond the Island Pool, around 680m away, separated by the A449. Caunsall Marsh is characterised by Marshland, Wet Woodland, and Grassland. The Staffordshire and Worcestershire Canal, an Open Water – flowing LWS, is 870m to the west, and the River Stour, another Open Water – flowing LWS, is just beyond this, some 980m from the site's western boundary. The Churchill &amp; Blakedown Valleys LWS, designated for its Open Water- flowing &amp; pools Marshland Wet Woodland habitats, is some 1,130m to the east/south-east. All of these sites are probably at a sufficient distance, and have</p> | <p>Careful consideration should be given to ensuring that the Island Pool LWS is not adversely affected.</p> |

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|  |  | <p>various screening in place, such that significant adverse effects are not predicted to arise.</p> <p>No Local Geological Sites have been identified within 1.5km of the site.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |  | <p>Baches Forge scheduled monument is some 1.5km to the east.</p> <p>There are 11 listed buildings within 1.5km of the site, all listed at Grade II. The closest listed buildings to the site are 'Ismere House' and the 'Barn about 20 metres west of Ismere house' both approximately 200m to the east. These buildings may experience some degree of negative impact on their setting through noise, dust, etc., and possibly visual impact (although there is currently a degree of tree screening between them).</p> <p>'Parr's Farmhouse' and the 'Barn about 15 metres south of Parr's Farmhouse' are both listed at Grade II, and are around 390m and 380m to the west of the site, respectively. Desktop research suggests that any visual impact on these buildings would be limited by the sharply rising field forming a ridge between them and the site.</p> <p>The 'Churchill' Conservation Area is some 1,100m to the east/southeast of the site, and the 'Staffs and Worcs Canal' Conservation Area – which runs from Stourport through Kidderminster and beyond the north of the county boundary - is within 890m to the north west.</p> <p>This site is located within a landscape that was historically common heathland. There is a heightened potential for prehistoric flint artefacts at this location in common with comparable former heathland landscapes. The site is also located within the setting of Ismere, which is documented to be an early medieval settlement site.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby listed buildings and conservation area. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |
| <p><b>4: Material assets</b><br/>                 Ensure efficient use of land through safeguarding of</p>   |  | <p>Most of the site falls within grade 3 agricultural land (more detailed mapping, to show whether this is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine). A small part of the south east of the site (less than 10% by area) falls within grade 2.</p>  | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic</p>   |

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| <p>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 site is wholly within the Green Belt. Mineral extraction is not inappropriate in the Green Belt, provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in green belt. However, the construction of new buildings associated with minerals extraction within the green belt will be inappropriate, and would need to demonstrate very special circumstances. The proposed processing for minerals extracted at Wolverley Glebe is currently unknown, so it is unclear whether processing buildings will be required within the site. As such, the likely impact on openness of the green belt cannot be foreseen at this stage.</p>   | <p>reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | <p>- -</p> | <p><b>Water quality</b><br/>The whole of the site falls within Source Protection Zone (SPZ) 3. Roughly the eastern half of the site falls within SPZ2, and a small part of the north of the site falls within SPZ1. There is a further SPZ1 associated with the Ismere sewage pumping station east of the A451, which is within 160m of the eastern part of the site at its closest point. It is unclear at this stage whether the working would occur below the groundwater table and therefore require dewatering. If properly managed, dewatering should not result in deterioration in quantity or quality of groundwater resources, but it does create the possibility of increased risk. There is the potential for negative cumulative impacts on the SPZ3, as the 'Land north of Wolverley Road' and 'Strong Farms' sites to the north are also within the same zone.</p> <p><b>Air quality</b><br/>There are no AQMAs within or in close proximity to the site. The nearest AQMAs are in Dudley and the centre of Kidderminster. Transport from the site could potentially add to the negative air quality in Kidderminster. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Land North of Wolverley Road' or 'Strong Farms', and 'Land South of Wolverley Road', both of which would also be likely to use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs at Kidderminster and Dudley.</p>   |

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| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is within 1.5km of the northern edge of the built-up area of Kidderminster at its closest point.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>A narrow band of floodzone 2 and 3 runs through the southern half of the site roughly west to east. The floodzone within the site extends to around 40m at its widest. A band of 1 in 1000 surface water flooding (within which are some smaller areas of 1 in 30 and 1 in 100 flood areas) passes roughly north-west to south-east through the centre of the site.</p> <p>Sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended, and as such the presence of Flood Zone 3 will attract a minor negative rating. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

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| <p><b>8: Access to Services</b><br/>         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>The site is bisected at its narrowest point by two footpaths. Footpath 616 runs north-west to south-east, and footpath 618 runs roughly east to west. The south-eastern boundary of the site follows the line of footpath 617, and bridleway 614 runs just outside the northern boundary. Any of these footpaths could be affected by the development at different stages in its operational life, and it is likely that some degree of closure or diversion will be required for those that pass right through the centre of the site, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>         Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>  | <p>The site is bounded to the south-west by Axborough Lane, over which lies the former Lea Castle hospital site. This redundant site has the potential to be redeveloped for a range of uses and, being a previously-developed site in the green belt, is likely to come forward through a planning application. If the site were to be developed, there is a risk of incompatibility between the future land uses and minerals operations. This could arise from, inter alia, emissions of noise and dust that could negatively affect people's health. There may be the potential for cumulative impacts on sensitive receptors to arise if this site were to be developed in parallel with 'Land North of Wolverley road' or 'Strong farms', and 'Land South of Wolverley Road'.</p> <p>Various farms and dwellings could potentially experience dust and noise impacts, not least Whitehouse Farm, which is almost surrounded by the site. Other buildings around the A451, Axborough Lane, Common Barn Lane, and Beechtree Lane could all potentially be affected.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

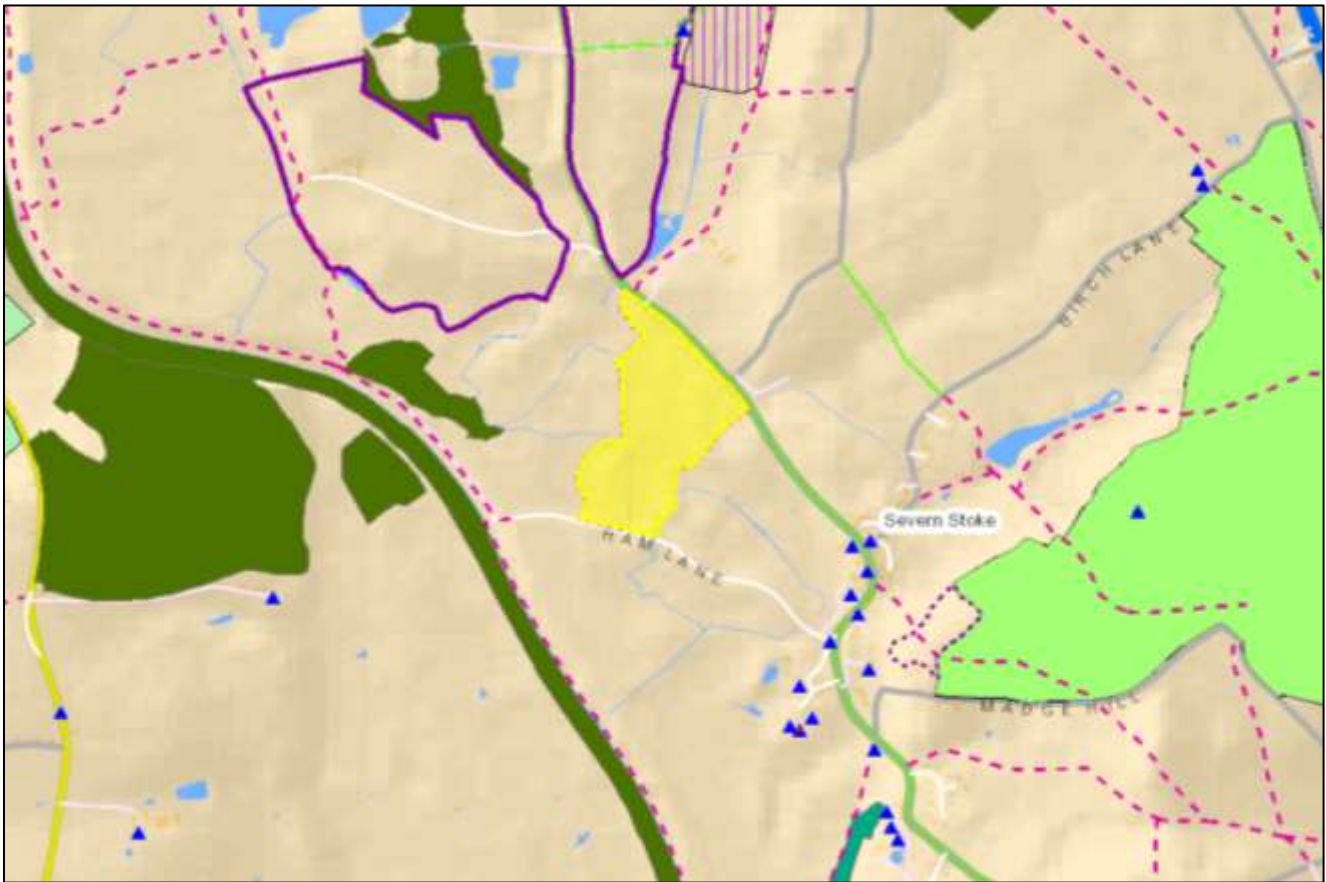
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|  |          | <p>A high-voltage electricity transmission line runs roughly north-south through the very east of the site, and the site includes a pylon and other ground-mounted infrastructure within its proposed boundaries. As above, procedures exist to ensure that this infrastructure is protected, so there is no justification for a negative SA rating on these grounds at the current stage.</p>   |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>The proposed site boundary is not within or close to any waste site or its 250m buffer zone.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | <p>-</p> | <p>The Staffordshire and Worcestershire canal is within 900m of the western site boundary, with the river Stour 100m or so further away. There are no apparent means to access water-borne transport, and it may be that water-borne transport would not be viable at this location, but the proximity does mean it should be explored.</p> <p>There are no rail freight depots in the county, and none in close proximity to this site.</p> <p>Material from the site would most likely be transported along the A451 which, as an advisory lorry route, would be suitable for this purpose. The site is reasonably close to built-up areas where the minerals may be used, including Kidderminster and Stourbridge, but the reliance on road transport nevertheless means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Land North of Wolverley Road' or 'Strong Farms', and 'Land South of Wolverley Road', all of which would also be likely to see HGV movements along the same road network.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the Staffordshire and Worcestershire canal and to the river Severn, the potential for water-borne transport should be explored.</p> |

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|  |   | The closest bus stops appear to be on the A449, around 1.4km to the west, and on Park Gate Road, some 1.4km to the south. Services run to Kidderminster and Halesowen. There is no railway station in close proximity.   |  |
| <b>I2: Growth with prosperity for all</b><br>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.       | + | The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage. | The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy, including in neighbouring South Staffordshire district and Staffordshire county. |
| <b>I3: Provision of housing</b><br>Provide decent affordable housing for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments. | + | The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.  | The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy, including in neighbouring South Staffordshire district and Staffordshire county.                          |

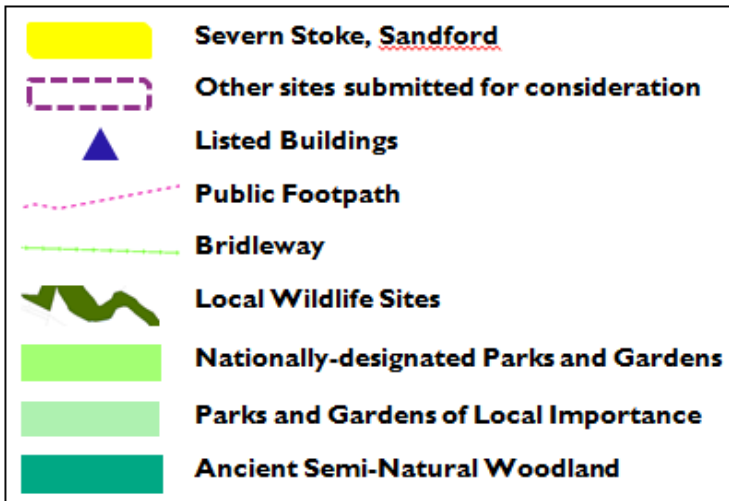


# Site 14: Severn Stoke, Sandford

300,000t, 11 Ha, access unknown, processing unknown



### Legend



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The site falls wholly within the 'Riverside Meadows' Landscape Type, and the MW33.9a Land Cover Parcel. Guidance on the 'Riverside Meadows' landscape type seeks to retain the unity of the linear form of these landscapes; conserve all existing areas of permanent pasture; seek opportunities to encourage the conversion of arable land back to arable; conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; conserve existing wetland habitats and seek opportunities for further wetland habitat creation; avoid building or road construction works; avoid further drainage of waterside meadows; and explore opportunities to return to patterns and processes of natural flooding cycles where feasible.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations, but they could help to inform the restoration of the site as part of any green infrastructure proposals. IT is likely that some of the guidance will not be adhered to in the short to medium term; some degree of building and road construction works will almost certainly be required to facilitate minerals extraction. In the longer term, however, most if not all of these characteristics could potentially be retained or re-instated.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in close proximity ('Clifton East' and/or 'Clifton South'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site lies between the Malvern Hills AONB (around 6.1km to the west) and the Cotswolds AONB (8.3km to the south-east). Whilst some aspects of the site may be visible in distant views from higher ground in the AONBs, the distances involved mean these are unlikely to be</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |  | <p>dominating features and, as such, it is not envisaged that there would be significant negative visual impacts on the AONBs.</p> <p>The only nationally-designated park and garden within 1.5km is the Grade I listed Croome Court, about 660m to the east/south-east. The Grade II Pirton Park is about 1,970m to the north-east, the other side of the M5 motorway. It is unclear whether there would be significant inter-visibility between the park and garden and the site, although there are higher areas of Croome Court that may experience negative visual impact. Any impact on Pirton Park may be lessened by the presence of tee motorway in foreground views from the park towards the site.</p> <p>Rhydd Court, an unregistered historic park and garden of local importance, is 1,300m to the west, the other side of the river Severn. There may be some degree of inter-visibility between these sites, but existing substantial areas of woodland will reduce this potential.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using the river Severn, and those using rights of way.</p> <p>The site is in a relatively isolated rural location, with no dwellings within the site boundary. The nearest dwellings are three properties just beyond the site's northern-most extent, separated from the site by the A38. There are no other properties within the site's immediate surroundings, but the nearest property in the settlement of Severn Stoke is within about 350m of the site's southern boundary. Many houses in and around Severn Stoke could potentially experience negative visual impacts.</p> |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance<br/>Worcestershire's biodiversity and</p> |  | <p>Ashmoor Common SSSI is some 520m to the north of the site, and the site falls within a SSSI impact risk zone. There are no other SSSIs within 1.5km of the site boundary. There is the potential for some degree of impact of the SSSI, especially as it is in the direction of the prevailing wind from the site, so that dust could, potentially be carried to the SSSI. The presence of the A38, however, which is a busy principal A road, may</p>   | <p>The likely impacts on the Ashmoor Common SSSI should be considered in detail, and if negative impacts are likely, then appropriate measures should be considered. These may include ensuring vehicle movements will not give rise to</p> |

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| <p>geodiversity.</p> |  | <p>mean that any additional dust from the site is negligible (although the road could act in combination with the site to create a greater cumulative impact).</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoin the site, but there are five within 1.5km the site boundary. The closest is the Brickpits Plantation &amp; Sandford Pits, an Open Water - standing Wet Woodland LWS 210m to the west. The River Severn Open Water – flowing LWS is 220m to the west.</p> <p>Clifton Arles Grassland Marshland Swamp Wet Woodland LWS is 240m to the north-west. Given the proximity of these three sites, and the relative lack of built development to act as a barrier to negative impacts, there is the potential for negative impacts to be felt as a result of minerals extraction at this site.</p> <p>Cliffey Wood &amp; Cliffs Broadleaved Woodland LWS is 630m west. Birch Arles Broadleaved Woodland LWS in 990m to the north-east. Both these sites are considered to be at a sufficient distance as to be unlikely to experience significant negative effects.</p> <p>Any impacts on biodiversity could be worsened through the cumulative effects of also developing nearby sites ('Clifton South' could impact, in particular, on Brickpits Plantation &amp; Sandford Pits and the River Severn. 'Clifton East' could also lead to cumulative impact, in particular on Clifton Arles. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> | <p>adverse impacts such as noise and dust, and installing protective barriers and screening, etc. Consideration should also be given to potential impacts on the nearby Local Wildlife Sites.</p> |
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|  |          | <p>The Ashmoor Common Local Geological Site is about 1,270m to the north, beyond the A38. Given the distance involved, negative impacts as a result of extraction at this site are considered unlikely.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, but four ASNWs are found within 1.5km. Part of Clifton Arles ASNW is 470m to the north-west; Birch Arles ASNW is 1,000m north-east; Severn Bank Wood is 830m to the south; and part of Cliff Wood is 1,390m south.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site. The only SAM within 1.5km is the 'Churchyard cross in St Denys's churchyard', 580m south-east. Given the SAM's location, screened by buildings and trees, inter-visibility with the site is unlikely, but there could potentially be other impacts on its setting, including noise and dust. Given the distance involved, these impacts are not considered likely to be significant.</p> <p>There are no listed buildings within or adjoining the site, but there are 32 within 1.5km of the site boundary. Most of these are listed at Grade II, although there is one listed at Grade I (The Panorama, about 970m to the south-east) and one listed at Grade II* (Church of St Denys, 550m south). The closest listed buildings are those in Severn Stoke, which begin around 400m to the south. Due to The Panorama's elevated setting, it is possible that development some distance away could have a negative impact, but it is considered unlikely that extraction at this site would have such an impact as to give rise to significant negative effects. The listed buildings in Severn Stoke could well be negatively impacted, as many are likely to experience inter-visibility, and could also be subjected to noise and dust impacts. Cumulative impacts could also arise if nearby sites ('Clifton East' and/or 'Clifton South') were to be developed at the same time.</p> <p>There are no Conservation Areas within 1.5km of the site.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby SAM and listed buildings. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |

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|   |            | <p>The site is located within a landscape associated with an extensive historic watermeadow. Historic water management structures and features are potentially associated with field boundaries where there has been the strongest survival of historic features outside arable land.</p>   |  |
| <p><b>4: Material assets</b><br/>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>The northern part of the site – around 41% of the total area - falls within grade I agricultural land. The central and southern parts fall within grade 4. Grade I land is considered to be 'best and most versatile agricultural land' and as such it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>  | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-/0</p> | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved through Worcester or Tewkesbury, there may be the potential to impact on the AQMA in those areas. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Clifton East' and/or 'Clifton South', which would also be likely to use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs in Worcester and Tewkesbury.</p>  |

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| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a relatively remote rural location, some distance from any urban area. Its proximity to the river Severn (within some 220m at its closest) may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>The entirety of the site is within Floodzone 3, and almost all of the site is also within Floodzone 2, associated with the river Severn. There is a significant area of 1 in 1000 surface water flooding in the centre and west of the site, as well as some smaller areas of 1 in 30 and 1 in 100 surface water flooding around the site boundary.</p> <p>Sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended, and as such the presence of Flood Zone 3 will attract a minor negative rating. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |



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| <p><b>8: Access to Services</b><br/>         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>There are no rights of way passing through the site or running adjacent to the site boundaries. Footpath 540 begins/ends just beyond the site's northern-most corner, on the opposite side of the A38. Footpaths 564 and 529 run alongside the river Severn to the west of the site, coming within 160m and 200m of the site boundary, respectively. It may be that minerals extraction could interfere with enjoyment of one or more of these rights of way through visual intrusion, noise and/or air pollution. It is not anticipated that temporary or permanent closure or diversion may be required, but this will depend on the circumstances and cannot be modelled at this stage. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>         Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>   | <p>The site is in a relatively isolated rural location, with no dwellings within the site boundary. The nearest dwellings are three properties just beyond the site's northern-most extent, separated from the site by the A38. There are no other properties within the site's immediate surroundings, but the nearest property in the settlement of Severn Stoke is within about 350m of the site's southern boundary. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Clifton East' and/or 'Clifton South'.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> <p>There are no electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

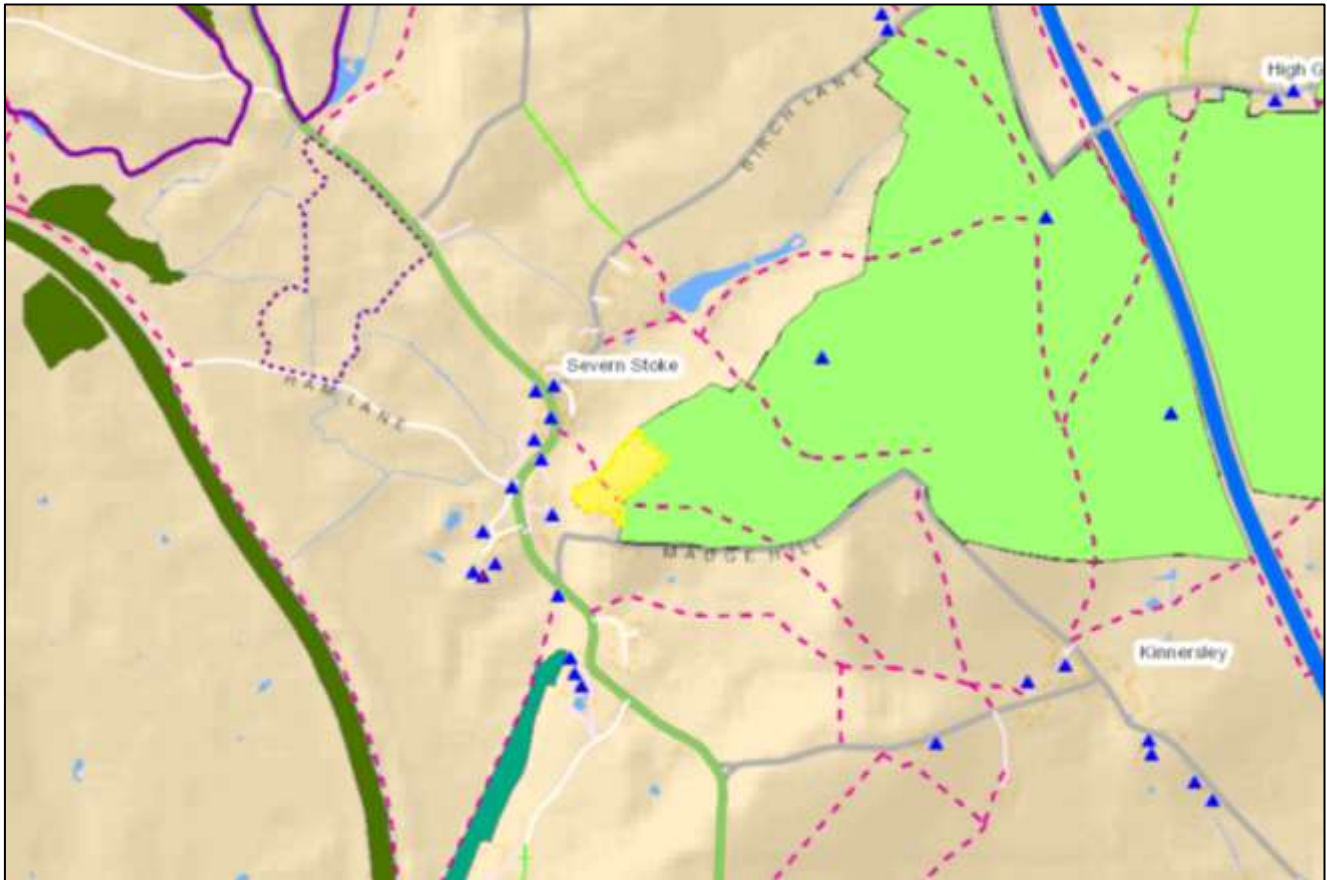


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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site. The closest site is Grove House Farm waste transfer station, about 3.7km to the south.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>The river Severn is 220m away at its closest point, and may offer opportunities to move material by water. There are loading facilities on the Severn some 5km south (as the crow flies), used for moving material between extraction and processing at minerals sites in that area. Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Clifton East' and/or 'Clifton South' – as well as many other sites using the A38 – all of which would also be likely to see HGV movements along the same road network.</p> <p>There is a bus stop along the A38, adjacent to the site's western boundary, with services to and from Worcester and Upton. There is no railway station in close proximity to the site.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the Staffordshire and Worcestershire canal and to the river Severn, the potential for water-borne transport should be explored.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and</p>  | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>   |









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| <p>skills base whilst ensuring all share the benefits, urban and rural.</p>  |                                      | <p>at this stage.</p>  |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 15: Severn Stoke, Madge Hill

Unknown tonnage, 2Ha, access unknown, processing unknown



### Legend

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|  | <b>Severn Stoke, Madge Hill</b>                |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Nationally-designated Parks and Gardens</b> |
|  | <b>Ancient Semi-Natural Woodland</b>           |



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | <p>--</p>                    | <p>Almost the entire site falls within the 'Estate Farmlands' landscape type, with a very small sliver of land in the north-west of the site (around 1.5% of the total site area) falling within the 'Settled Farmlands on River Terrace' landscape type.</p> <p>Guidance on the 'Estate Farmlands' landscape type seeks to enhance tree cover through further planting of small scale plantations and tree belts; conserve the pattern of hedged fields, with priority given to primary hedgelines; conserve and restore parkland and the tree cover associated with large ornamental grounds; conserve and enhance tree cover along water courses; promote the development of wide field margins for wildlife benefit; and conserve the integrity of estate villages. The tiny proportion of this site with in the 'Settled Farmlands on River Terrace' means this will be less relevant, but it is worth noting that some of the landscape guidelines for this landscape type are shared with those above, including conserving and enhancing tree cover along watercourses and conserving hedgerows.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations, but they could help to inform the restoration of the site as part of any green infrastructure proposals. It should be possible to respect at least some of the guidelines during extraction.</p> <p>Most of the site falls within the MW66b Land Cover Parcel, with a small area (c1.5%) falling within MW64a.</p> <p>The site lies between the Malvern Hills AONB (around 6.5km to the west) and the Cotswolds AONB (7.5km to the south-east).</p> <p>Croome Court is Grade I listed nationally-designated park and garden which immediately adjoins the site's north-east and eastern boundary.</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations, with a particular focus on the grade I landscape of Croome Court. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>There is some dense tree planting on the northern site boundary, but along most of the length of the boundary shared with the park there is almost no physical screening at all. The potential for some degree of harm to arise on the setting of this landscape is clear. Croome Court is also an unregistered park and garden of local importance, and the only such asset within 1.5km.</p> <p>The Grade II Pirton Park is about 2,070m to the north-east, the other side of the M5 motorway.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using the river Severn, and those using rights of way.</p> <p>The site is in a rural location. Whilst there are no dwellings within the site boundary, there is a single dwelling immediately adjacent to the south of the site. Other residential dwellings that could be affected are those in Severn Stoke itself to the west, and those around Madge Hill to the south. Although there is some dense tree screening around the south-west of the site, other parts of the site offer more open boundaries.</p> |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>Ashmoor Common SSSI, designated for its biological and geological interest, is 1,280m to the north, and the site falls within a SSSI impact risk zone. There are no other SSSIs within 1.5km of the site boundary. Given the distance involved, and the presence of intervening roads and built development, it is considered unlikely that there would be significant negative effects on the SSSI.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are five within 1.5km the site boundary. The closest is the River Severn Open Water – flowing LWS, around 680m to the west. Brickpits Plantation &amp; Sandford Pits, an Open Water - standing Wet Woodland LWS is 1,050m to the north-west; Birch Arles Broadleaved Woodland LWS is 1,340m to the north; Clifton Arles Grassland Marshland Swamp Wet Woodland LWS is 1,400m to the north-west; and Cliffee Wood &amp; Cliffs Broadleaved Woodland LWS is also 1,400m to the</p>   | <p>The likely impacts on sensitive receptors should be assessed, and if negative impacts are likely, then appropriate measures should be considered. These may include ensuring vehicle movements will not give rise to adverse impacts such as noise and dust, and installing protective barriers and screening, etc.</p> |

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|   |  | <p>west. Given the distance to these receptors from the site, and the intervening development, roads and other features, it is considered unlikely that significant negative effects would be experienced as a result of minerals extraction at this site.</p> <p>There are no Local Geological sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, but four ASNWs are found within 1.5km. Severn Bank Wood is 340m to the south; Part of Cliff Wood is 1,160m south; Barnes's Rough is 1,250m south; and Birch Arles is 1,330m north. Part of Clifton Arles ASNW is just beyond 1.5km to the north-west. Given the distances involved, physical removal of trees is unlikely, but there could be negative impacts arising from dust, etc. This is considered unlikely due to intervening screening, including a dense tree belt between the site and the nearest ASNW.</p>  |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |  | <p>There are no Scheduled Ancient Monuments (SAM) within the site. The only SAM within 1.5km is the 'Churchyard cross in St Denys's churchyard', 280m to the south-east. This SAM is separated from the site by some dense tree planting, the southern half of the built up area of Severn Stoke, and a main road. As such, no visual impact is likely, but there could still be impacts on the assets setting as result of dust, vibration, noise, etc.</p> <p>There are no listed buildings within or adjoining the site, but there are 31 within 1.5km of the site boundary. Most of these are listed at Grade II, although there is one listed at Grade I (The Panorama, about 440m to the north-east) and one listed at Grade II* (Church of St Denys, 280m south-west). The closest listed building is the complex of 'Broadacre, Severn Hill, and Bankside' in Severn Stoke, around 50m to the south-west. Many of the listed buildings in Severn Stoke are likely to be screened from direct views, although some may have inter-visibility, and the Panorama, being a higher viewpoint, will have views of the site. Other impacts, including dust, noise and vibrations, could potentially impact on</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including the nearby SAM and listed buildings. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |

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|   |     | <p>the buildings' settings.</p> <p>There are no Conservation Areas within 1.5km of the site.</p>  |  |
| <p><b>4: Material assets</b><br/>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 entire site falls within grade 3 agricultural land. More detailed mapping, to show whether the Grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore currently unclear whether any 'best and most versatile' land would be affected.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p> | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land, if this is present. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | -   | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved through Worcester or Tewkesbury, there may be the potential to impact on the AQMA in those areas.</p>   | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs in Worcester and Tewkesbury.</p>  |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the</p>  | -/? | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and</p>   | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and</p>  |

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| <p>impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>  |    | <p>electric plant.<br/>The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.<br/>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a rural location, some distance from any urban area. Its proximity to the river Severn (within some 690m at its closest) may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.<br/><br/>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>habitat links.<br/><br/>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p>  |
| <p><b>7: Flooding</b><br/>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>The site lies just beyond the extensive floodzones associated with the river Severn. It is within 140m east of floodzone 3, and 50m east of floodzone 2. Maps suggest there are no areas of surface water flooding within the site.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities,</p>   | -- | <p>Footpath 550 runs north-west to south-east straight through the site. There are no other rights of way in close proximity. Given the route of footpath 550, it is likely that temporary or permanent closure or diversion may be required, but this will depend on the circumstances and cannot be modelled at this stage. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved</p> |

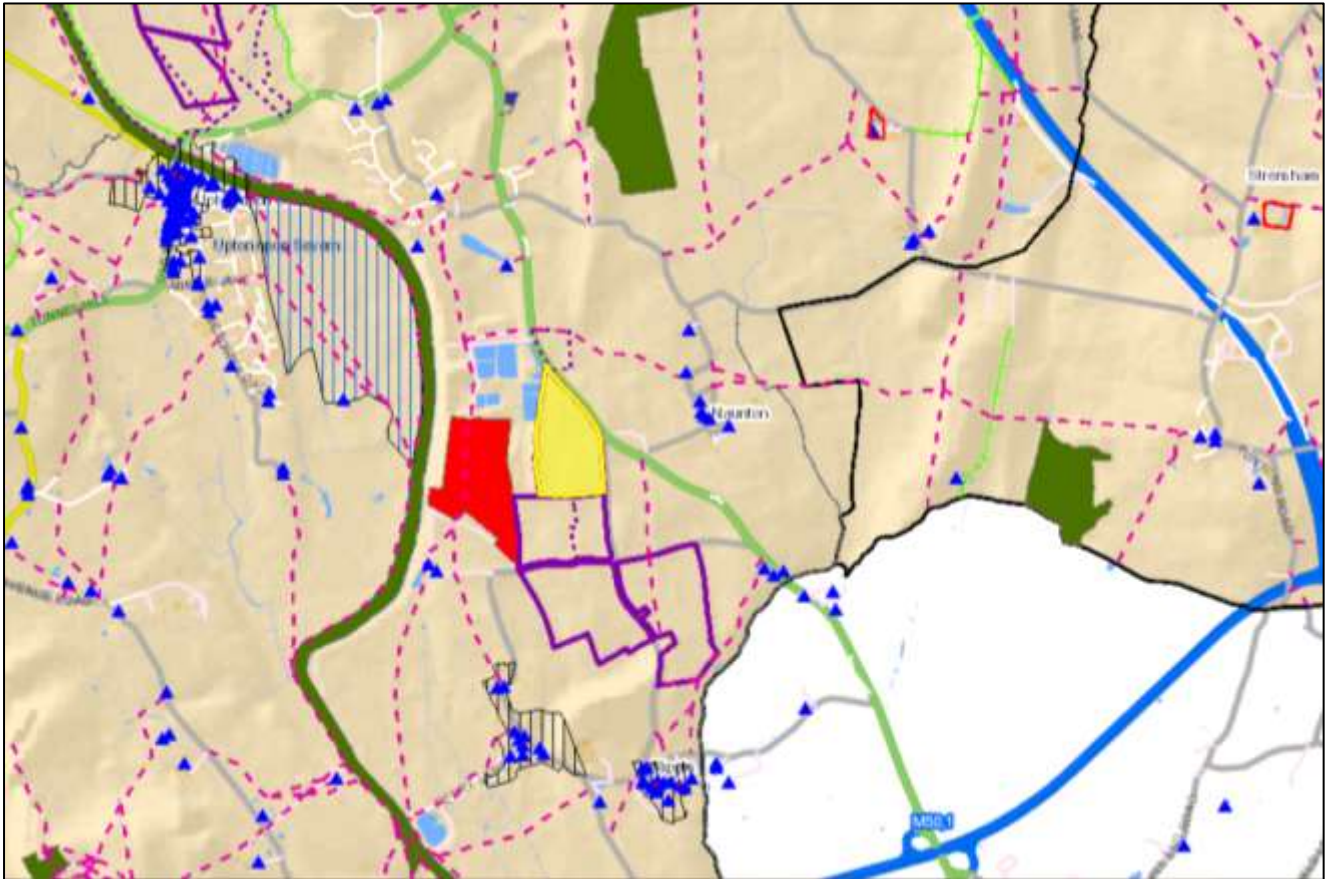


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| <p>regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>  |   | <p>entirely.</p>  | <p>compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>                               | - | <p>The site is in a rural location. Whilst there are no dwellings within the site boundary, there is a single dwelling immediately adjacent to the south of the site. Other residential dwellings around the site are those in Severn Stoke itself to the west, and those around Madge Hill to the south. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site.</p>   | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site. The closest site is Grove House Farm waste transfer station, about 3.2km to the south.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>The river Severn is 690m away at its closest point, and may offer opportunities to move material by water. There are loading facilities on the Severn some 4.6km south (as the crow flies), used for moving material between extraction and processing at minerals sites in that area. Water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the Staffordshire and Worcestershire canal and to the river Severn, the potential for water-borne transport should be explored.</p>   |










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|  |   | <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>There are bus stops along the A38 in Severn Stoke, about 530m west of the site, with services to and from Worcester and Upton. There are no railway stations in close proximity.</p>  |  |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>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 site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |

# Site 16: Ryall East

Unknown tonnage, 15Ha, access unknown,  
processing at existing plant at Ryall House Farm



## Legend

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|  | <b>Ryall East</b>                              |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Scheduled Ancient Monuments</b>             |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Sites of Special Scientific Interest</b>    |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Settled Farmlands on River Terrace' landscape type and the MW69c Land Cover Parcel. Guidance on this landscape type seeks to retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations. Maintaining cropping/horticultural land use would obviously not be compatible with minerals development in the short to medium term, for example. But a phased approach to working could see many of the characteristics maintained.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in close proximity (Land at School Lane or Land north east of Uckinghall Lane, and Land opposite Ryall Quarry entrance). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity (especially as the area is already partly in active/restored minerals use).</p> <p>The site lies between the Malvern Hills AONB (around 7km to the west) and the Cotswolds AONB (5.4km to the east). Although the site may be visible from higher ground in both AONBs, it is not considered likely that any negative impacts would be significant.</p> <p>There are no nationally-designated parks and gardens, or undesignated parks and gardens of local importance in close proximity to the site. The closest national site is Croome Court Grade I listed park and garden, about 4.3km to the north. This is likely to be too distant to lead to</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. During operations, landscaping, including screening bunds and/or belts of trees, should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>significant negative visual impacts.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using the river Severn, and those using rights of way.</p> <p>The site is in a rural location. There are no dwellings within the site boundary. There is a small group of dwellings east of the site on the other side of the A38, but beyond this the only collection of dwellings is in the settlement of Naunton, around 500m to the east.</p>  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>-</p> | <p>There are no SSSIs within or immediately adjoining the site. The only SSSI within 1.5km is Upton Ham, designated for its biological interest, 560m to the west, beyond the river Severn. The site falls within a SSSI impact risk zone. Given the distance involved, and the fact that there is already a processing plant close to the SSSI, it is considered unlikely that extraction at the site would have a significant detrimental effect on the SSSI, although it is possible that minor negative impacts could act cumulatively in combination with existing and surrounding development to lead to an overall increase in severity of impact. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> | <p>The likely impacts on sensitive receptors, including the Upton Ham SSSI and the river Severn LWS, should be assessed, and if negative impacts are likely, then appropriate measures should be considered. These may include ensuring vehicle movements will not give rise to adverse impacts such as noise and dust, and installing protective barriers and screening, etc.</p> |

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|  |          | <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are two within 1.5km the site boundary: the River Severn Open Water – flowing LWS is 500m to the west, and the Smithmoor Common &amp; Meadows Grassland Marshland LWS is 920m to the north. If there is potential for operations at the site or at the existing processing plant to lead to releases to the river Severn, this could impact negatively upon the LWS. These impacts could be worsened through the cumulative effects of also developing nearby sites (Land at School Lane or Land north east of Uckinghall Lane, and Land opposite Ryall Quarry entrance).</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, and none within 1.5km.</p>  |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site. There are three SAMs within 1.5km, one in the settlement of Uckinghall, and two in Ripple: Uckinghall cross is 1,200m to the south; Ripple village cross is 1,430m south; and the Cross north of St Mary's Church is 1,460m south. All of these SAMs are considered to be at a sufficient distance, and surrounded by existing development, to mean that significant negative impacts are unlikely to arise as a result of extraction at this site.</p> <p>There are no listed buildings within or adjoining the site, but there are 60 within 1.5km of the site boundary. All of these are listed at grade II, except for the grade I listed Church of St Mary in Ripple, some 1,470m to the south. It is considered unlikely that any of the listed buildings are close enough to the site to be significantly adversely affected, although there could be some degree of visual and other impacts (dust, noise, traffic, etc.). Cumulative impacts could also arise if nearby sites (Land at School Lane or Land north east of Uckinghall Lane, and Land opposite Ryall Quarry entrance) were to be developed at the same time.</p> <p>There are two Conservation Areas within 1.5km of the site: Uckinghall, which begins 840m to the south, and Ripple, 1,320m to the south. These</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |

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|   |           | <p>are considered to be sufficiently distant to avoid significant adverse negative impacts.</p> <p>This section of the Severn Vale is abundant with multi-period below-ground archaeology that includes a high potential for surviving, well-preserved organic deposits, artefacts and structures. This is at risk from de-watering and the impact of restoration methods where, for example, trees might be planted in areas with preserved features.</p>  |   |
| <p><b>4: Material assets</b><br/>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>The entire site falls within grade I agricultural land. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>   | <p>The site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p>  | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved through Worcester or Tewkesbury, there may be the potential to impact on the AQMA in those areas. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Land at School Lane' or 'Land north east of Uckinghall Lane', and/or 'Land opposite Ryall Quarry entrance', which would also be</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs in Worcester and Tewkesbury.</p> |



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|   |     | likely to use HGVs and to pass along the same road network.  |  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The site proposes to use the existing processing plant at Ryall House Farm, which may be beneficial compared to transporting the material to a more distant facility. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a rural location, some distance from any urban area. Its proximity to the river Severn (within some 500m at its closest) may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>The site is not within any floodzone, and is some 480m from the nearest, which is associated with the river Severn to the west. There is a small area of 1 in 1000 surface water flooding in the very south-west corner of the site, as well as two negligible areas in the north of the site.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |



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| <p><b>8: Access to Services</b><br/>                 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>There are no rights of way running through or immediately alongside the site. There are footpaths to the north, east and west, but they are some 200m away at their closest, and as such no temporary or permanent closure or diversion is likely to be required (although this will depend on the circumstances and cannot be modelled at this stage). Although some distance away, it is still possible that the site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>   | <p>The site is in a rural location. There are no dwellings within the site boundary. There is a small group of dwellings east of the site on the other side of the A38, but beyond this the only collection of dwellings is in the settlement of Naunton, around 500m to the east. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Land at School Lane' or 'Land north east of Uckinghall Lane', and/or 'Land opposite Ryall Quarry entrance'.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>   | <p>0</p>   | <p>Saxon's Lode landfill site is west of the site, some 140m away. The site is being filled with inert material.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

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| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | - | <p>There are no railheads in close proximity to the site.</p> <p>The proximity of water transport, with existing loading facilities on the river Severn within some 560m to the west (used for moving material between extraction and processing at minerals sites in that area) means that water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Land at School Lane' or 'Land north east of Uckinghall Lane', and/or 'Land opposite Ryall Quarry entrance', all of which would also be likely to see HGV movements along the same road network.</p> <p>There are bus stops along the A38, serving Upton, Worcester, and Tewkesbury. The closest is 250m to the east of the site. There are no railways stations in close proximity.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the Staffordshire and Worcestershire canal and to the river Severn, the potential for water-borne transport should be explored.</p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>   |
| <p><b>I3: Provision of housing</b><br/>Provide decent affordable housing</p>   | + | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>  |

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| for all, of the right quality and tenure and for local needs, in clean, safe and pleasant local environments. |  | been identified at this stage. |  |
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# Site 17: Harvington Green Street Allotments

Tonnage, size, access, and processing unknown



## Legend



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Village Farmlands with Orchards' landscape type and the VE26b Land Cover Parcel. Guidance on this landscape type seeks to conserve and restore traditional orchards, with emphasis placed upon the fruit type and varieties associated with different localities; conserve and restore lines of hedgerow fruit trees; retain pattern of strongly nucleated villages with associated low dispersal of settlement in between; conserve and restore hedgerow structure with emphasis upon the primary hedgelines; conserve and enhance tree cover along watercourses; encourage opportunities for tree planting in and around villages; promote development of wide field margins for wildlife benefit; and promote management of roadside verges for wildlife benefit. It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations, and it is unlikely that many of these could be met during site operations. The scale of the site means that phased working is unlikely. The characteristics could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site alongside 'Harvington North'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The nearest Area of Outstanding Natural Beauty is The Cotswolds, the closest part of which is 10.3km to the south of the site.</p> <p>There are no nationally-designated parks and gardens, or undesignated parks and gardens of local importance in close proximity to the site. The closest national site is the grade II* Rous Lench Court, which is 5km to the north-west.</p> <p>The closest unregistered historic park and garden of local importance is</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. Due to the site's proximity to housing, screening bunds and/or belts of trees may be insufficient to ameliorate the site's visual impact, but all measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>Wood Norton Hall, 2.9km to the south-west.<br/>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is in an edge-of-village location. It is outside the current settlement boundary of Harvington, but is in close proximity of housing (within 25m at its closest, and Harvington C of E School (within 100m). There is significant existing development to the south and west of the site and, at a further distance, to the east, too. It is likely that quite a high degree of localised visual impact would be experienced by properties in the vicinity along Village Street.</p>  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no SSSIs within or immediately adjoining the site, and none within 1.5km. The site falls within a SSSI impact risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are two within 1.5km of the site boundary. Harvington Carr Wet Woodland Marshland Swamp Open Water LWS is 940m to the east, on the other side of the A46. The River Avon Open Water - flowing Marshland LWS is 1,400m east, and is also beyond the A46. Because of the distances involved, and the presence of intervening built development – including a dual carriageway – it is not considered likely that significant effects would arise of the LWS as a result of extraction at this site. However, given the presence of allotments and the proximity of standing water, the likelihood of encountering protected species issues here (with the consequent potential need for mitigation/compensation strategies) is very high. Species could include great crested newt, badger, reptiles, and possibly bats. Mitigation strategies may impact the net area capable of extraction.</p> <p>There is the potential for cumulative impacts to arise as a result of development of this site alongside 'Harvington North'. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact,</p> | <p>The likely impacts on sensitive receptors should be assessed, and if negative impacts are likely, then appropriate measures should be considered. These may include ensuring vehicle movements will not give rise to adverse impacts such as noise and dust, and installing protective barriers and screening, etc.</p> |

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|  |          | <p>particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are a series of lakes to the east of the site, between the A46 and the Evesham road, within 550m at their closest.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, and none within 1.5km.</p> |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>         Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site, but the 'Prehistoric enclosures 3/4 mile (1200m) E of Norton Church' is almost exactly 1.5km away to the south, beyond the A46.</p> <p>There are no listed buildings within or adjoining the site, but there are 24 within 1.5km of the site boundary. Most of these are listed at grade II, but there are two listed at grade I: The Church of St James, 480m to the south; and Salford Hall, 1,320m north-east. The closest listed building to the site is 'Old Cottage', 260m to the south. Depending on the scale of operations, it may be that there is no inter-visibility between the site and these assets. However, it is possible that other impacts, including dust, noise and vibration, could negatively impact on the listed buildings' settings. Cumulative impacts could also arise if 'Harvington North' were to be developed at the same time.</p>   | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |



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|   |          | <p>There are two Conservation Areas within 1.5km. Harvington Conservation Area is 150m to the south, and Norton (Norton &amp; Lenchwick) is 1,380m to the south-west.</p>   |  |
| <p><b>4: Material assets</b><br/>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>The entire site falls within grade 2 agricultural land. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p> | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. Depending on where the material is transported to, there could potentially be implications on the Evesham and/or Studley AQMAs. The whole urban area of Stratford upon Avon is also an AQMA. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Harvington North' and/or 'Harvington West', which would also be likely to use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Evesham and Studley AQMAs.</p>  |



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| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in an edge-of-village location, around 4km from Evesham, which is the nearest major urban area. Its proximity to the river Avon (within some 1,390m to the south-east, at its closest) could potentially offer water-borne transport, but this would require loading and unloading facilities and, unlike the Severn which is classed as a 'commercial' waterway, the Avon is classed as a 'cruising' waterway.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>0</p>   | <p>The site is not within any floodzone, with the nearest floodzone (associated with the River Avon) being some 460m away to the north and east. There is a small area of 1 in 1000 surface water flooding in the southern side of the eastern half of the site.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

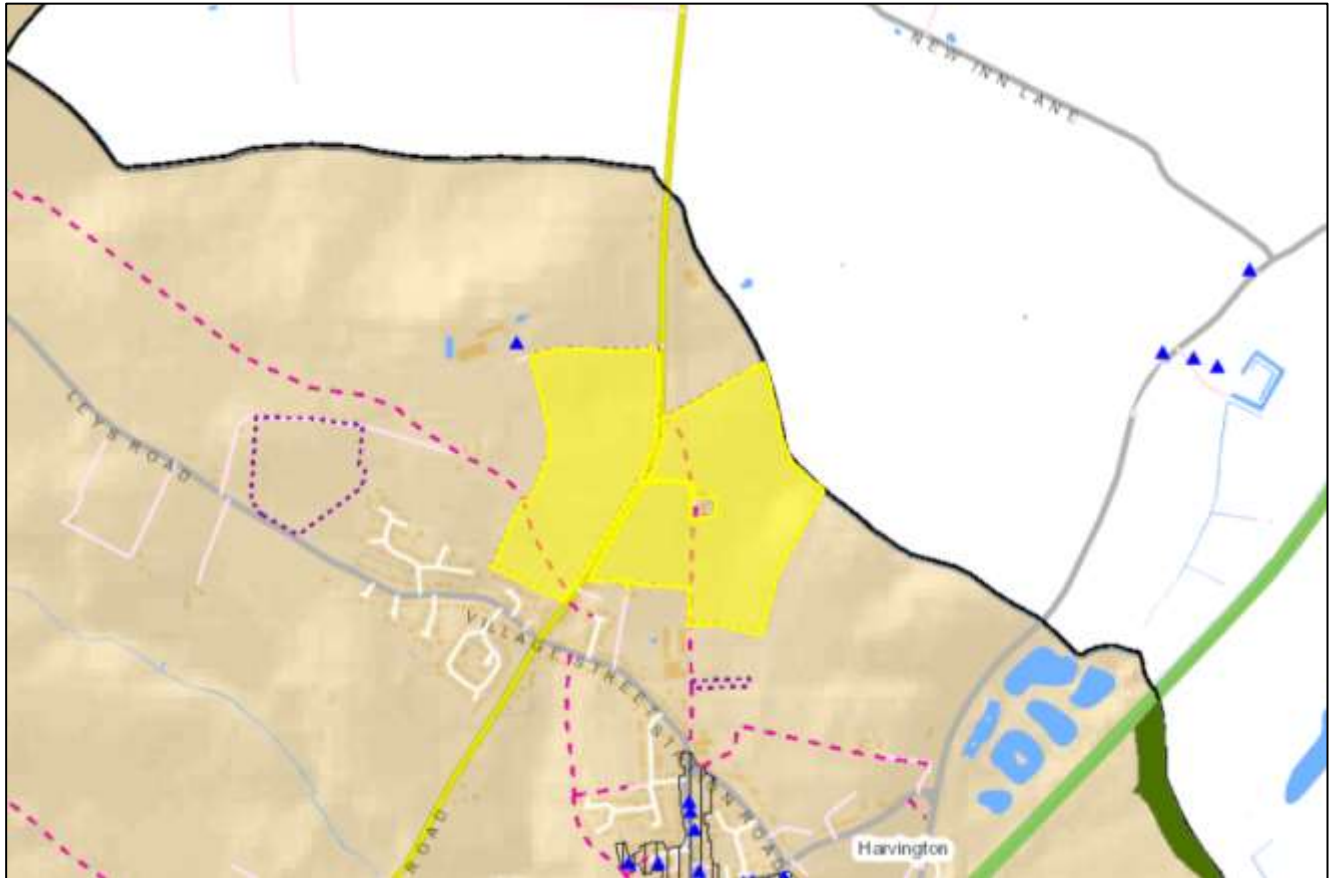
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| <p>areas.</p>   |    |  |   |
| <p><b>8: Access to Services</b><br/>         Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p> | -  | <p>There are no rights of way running through the site, but footpath 502, running roughly north to south, does follow the site's western boundary. The site could negatively affect users of this footpath or others within the vicinity, through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely. If footpath 502 is affected, there could also be a cumulative impact if 'Harvington North' is developed at the same time'.</p> <p>The site is only 80m away from the grounds of Harvington C of E school, and it is possible that minerals extraction here could have a negative impact on the school and could interrupt the provision of this service.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p> <p>Consideration needs to be given to minimising disturbance on the nearby school.</p>  |
| <p><b>9: Health and amenity</b><br/>         Improve the health and well-being of the population and reduce inequalities in health.</p>   | -- | <p>The site is in an edge-of-village location. It is outside the current settlement boundary of Harvington, but is in close proximity of housing (within 25m at its closest, and Harvington C of E School (within 100m of the buildings and 80m of the playing fields). There is significant existing development to the south and west of the site and, at a further distance, to the east, too. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Harvington North' and/or (to a lesser extent) 'Harvington West'.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts on the nearby school arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites in close proximity to the site. The closest waste site is a waste transfer station in Middle Littleton, some 2.9km to the south-east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>     |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>The site's proximity to the river Avon (within some 1,390m to the south-east, at its closest) could potentially offer water-borne transport, but this would require loading and unloading facilities and, unlike the Severn which is classed as a 'commercial' waterway, the Avon is classed as a 'cruising' waterway.</p> <p>If road transport is used, the A46 is an advisory HGV route, and so is appropriate for this use, although smaller village roads will be needed to access this, unless a specific new access were to be created. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Harvington North' and/or 'Harvington West', all of which would also be likely to see HGV movements along the same road network.</p> <p>Being located close to the centre of Harvington, there are bus stops close to the site, with the closest being on Village Street within 150m of the south of the site. The buses serve Evesham and Stratford. There is no railway station close to the site.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Avon, the potential for water-borne transport should be explored.</p> |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst</p>                           | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                             |

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| <p>ensuring all share the benefits, urban and rural.</p>   |                                      |  |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 18: Harvington North

575,000t, 32Ha, access unknown, processing unknown



### Legend

|   |  |
|---|--|
|  | <b>Harvington North</b>                        |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Village Farmlands with Orchards' landscape type. Guidance on this landscape type seeks to conserve and restore traditional orchards, with emphasis placed upon the fruit type and varieties associated with different localities; conserve and restore lines of hedgerow fruit trees; retain pattern of strongly nucleated villages with associated low dispersal of settlement in between; conserve and restore hedgerow structure with emphasis upon the primary hedgelines; conserve and enhance tree cover along watercourses; encourage opportunities for tree planting in and around villages; promote development of wide field margins for wildlife benefit; and promote management of roadside verges for wildlife benefit.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations. Desktop research suggests that part of the site is currently an orchard, which would inevitably be lost if this area were to be worked. The characteristics could not all be maintained in the short to medium term, but could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and 'Harvington West'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>Roughly the western half of the site falls within the VE25b Land Cover Parcel, with the eastern half in LCP VE26b.</p> <p>The nearest Area of Outstanding Natural Beauty is The Cotswolds, the closest part of which is 10.1km to the south of the site.</p> <p>There are no nationally-designated parks and gardens, or undesignated</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. Due to the site's proximity to housing, screening bunds and/or belts of trees may be insufficient to ameliorate the site's visual impact, but all measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>parcs and gardens of local importance in close proximity to the site. The closest national site is the grade II* Rous Lench Court, which is 4.2km to the north-west.</p> <p>The closest unregistered historic park and garden of local importance is Wood Norton Hall, 2.7km to the south-west.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is in an edge-of-village location. It is outside the current settlement boundary of Harvington, but is in close proximity of housing, directly abutting the curtilage of numerous properties on its southern edge, with other scattered dwellings and farms in close proximity, including Green Street Farm, which is surrounded on all sides by the site. It is likely that there will be a high degree of visual impact on these receptors, depending on any screening that would be provided, and the height of any operational equipment.</p> |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no SSSIs within or immediately adjoining the site, and none within 1.5km. The site falls within a SSSI impact risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are four within 1.5km the site boundary. Harvington Carr Wet Woodland Marshland Swamp Open Water LWS is 910m to the east, on the other side of the A46. Atch Lench Wood Ancient Semi-natural Woodland LWS is 1,220m to the north-west. Rough Hill (north) Wood Broadleaved Woodland is 1,370m to the west. The River Avon Open Water - flowing Marshland LWS is 1,430m east, and is also beyond the A46. Given the distances involved, and the presence of intervening development, roads, etc., it is considered unlikely that significant negative effects will arise as a result of extraction at this site.</p> <p>There is the potential for cumulative impacts to arise as a result of development of this site alongside 'Harvington Green Street Allotments'</p>  | <p>The likely impacts on sensitive receptors should be assessed, and if negative impacts are likely, then appropriate measures should be considered. These may include ensuring vehicle movements will not give rise to adverse impacts such as noise and dust, and installing protective barriers and screening, etc.</p> |

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|  |          | <p>and/or 'Harvington West'. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are a series of lakes to the east of the site, between the A46 and the Evesham road, within 620m at their closest.</p> <p>There are no Local Geological sites within 1.5km. The site adjoins the border with Stratford-on-Avon in Warwickshire, and there are no LGS in close proximity over the border either (the closest LGS in Warwickshire are 'Marsh Farm Salford Priors' 3.3km north, and 'Marcliff', some 3.5km to the east).</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, and none within 1.5km.</p> |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-</p> | <p>-</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site, and none within 1.5km.</p> <p>There are no listed buildings within the site, but the grade II listed Harvington Lodge is within 50m of the site's north-western corner. Desktop analysis does not show whether there is likely to be significant inter-visibility, but given the proximity, this is distinctly possible, especially if development occurs in this north-western corner of the site and if tall equipment is used. Apart from the visual impact, there could also be</p>  | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and</p> |



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| <p>efficient development which respects local character and distinctiveness.</p>  |          | <p>noise, dust, vibrations, and other impacts that could compromise the building's setting.</p> <p>There are 26 listed buildings within 1.5km of the site boundary. Most of these are listed at grade II, but there are two listed at grade I: The Church of St James, 600m to the south; and Salford Hall, 960m north-east. Some degree of impact on some of these buildings is possible but, given the distances involved and the local topography, significant impacts are considered unlikely to arise. The listed buildings at and surrounding Salford Hall are in the direction of the prevailing wind, which could increase the chances of dust and noise pollution being experienced in this area. Cumulative impacts could also arise if the nearby site of 'Harvington West' were to be developed at the same time.</p> <p>There are two Conservation Areas within 1.5km. Harvington Conservation Area is 310m to the south, and Norton (Norton &amp; Lenchwick) is 1,420m to the south-west.</p> | <p>buffer zones.</p>   |
| <p><b>4: Material assets</b><br/>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>The entire site falls within grade 2 agricultural land. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b></p>  | <p>-</p> | <p>Water quality<br/>There are no Source Protection Zones within or in close proximity to</p>   | <p>Measures to ensure the protection of water quality should be in place.</p>  |

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| <p>Protect and enhance water and air quality.</p>  |            | <p>the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. Depending on where the material is transported to, there could potentially be implications on the Evesham and/or Studley AQMAs. The whole urban area of Stratford upon Avon is also an AQMA. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Harvington West' and/or 'Harvington Green Street allotments', which would also be likely to use HGVs and to pass along the same road network.</p>  | <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Evesham, Studley, and Stratford AQMAs.</p>  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in an edge-of-village location, around 4km from Evesham, which is the nearest major urban area. Its proximity to the river Avon (within some 1,440m to the south-east, at its closest) could potentially offer water-borne transport, but this would require loading and unloading facilities and, unlike the Severn which is classed as a 'commercial' waterway, the Avon is classed as a 'cruising' waterway.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |

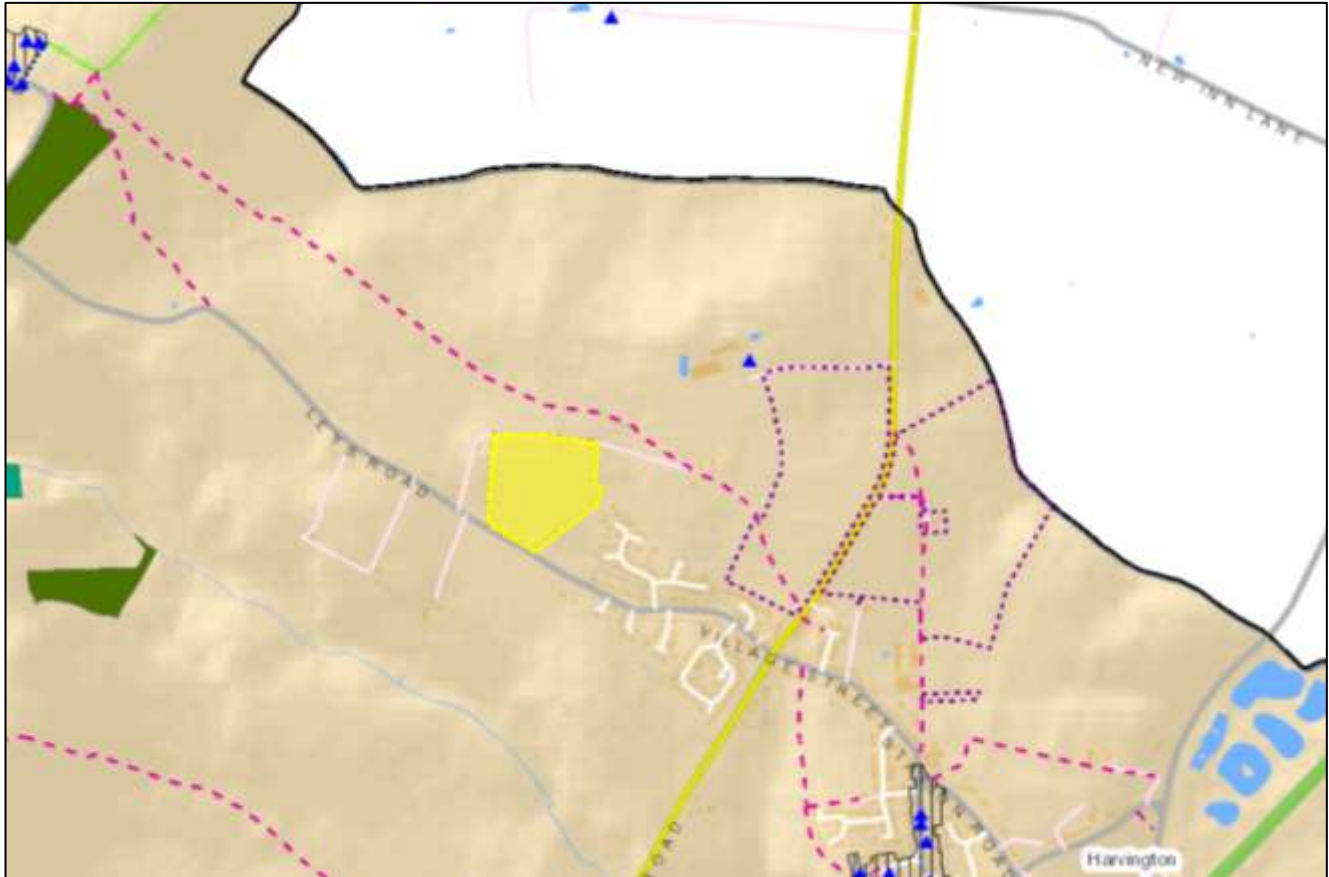
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| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to surface water flooding in all other areas.</p> | 0  | <p>The site is not within any floodzone, but the floodzone associated with the River Avon and its tributaries does abut part of the site's north-eastern boundary. Maps suggest there are no areas of surface water flooding within the site.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>  |
| <p><b>8: Access to Services</b><br/>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 site is crossed by three rights of way. In the eastern half of the site, footpath 502, which turns into footpath 503, runs south to north to the B4088 which divides the site's eastern and western sections. In the western half of the site, footpath 500 runs roughly north-west to south-east, crossing the site's south-western corner. Development of the site could require the permanent or temporary closure or diversion of these rights of way. The site could negatively affect users of these footpaths or others within the vicinity, through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely. Cumulative impacts could arise on footpath 502 if 'Harvington North' is developed at the same time.</p> | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>   |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>  | -  | <p>The site is in an edge-of-village location. It is outside the current settlement boundary of Harvington, but is in close proximity of housing, directly abutting the curtilage of numerous properties on its southern edge, with other scattered dwellings and farms in close proximity, including Green Street Farm which is surrounded on all sides by the site. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on</p>   | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening</p> |

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|  |          | <p>sensitive receptors could arise if this site were to be developed in parallel with 'Harvington West' and/or 'Harvington Green street allotments'.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site.</p>  | <p>where appropriate.</p>  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>There are no waste sites in close proximity to the site. The closest waste site is a waste transfer station in Middle Littleton, some 3km to the south-east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>     |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | <p>-</p> | <p>There are no railheads in close proximity to the site.</p> <p>Its proximity to the river Avon (within some 1,440m to the south-east, at its closest) could potentially offer water-borne transport, but this would require loading and unloading facilities and, unlike the Severn which is classed as a 'commercial' waterway, the Avon is classed as a 'cruising' waterway.</p> <p>If road transport is used, the A46 is an advisory HGV route, and so is appropriate for this use, although smaller roads may be needed to access this. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Harvington West' and/or 'Harvington Green Street allotments', all of which would also be likely to see HGV movements along the same road network.</p> <p>Being located close to the centre of Harvington, there are bus stops close to the site, with the closest being on the B4088 around 60m south of the site. The buses serve Evesham and Stratford. There is no railway station close to the site.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Avon, the potential for water-borne transport should be explored.</p> |

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| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy, including in neighbouring Stratford-on-Avon district and Warwickshire county.</p> |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy, including in neighbouring Stratford-on-Avon district and Warwickshire county.</p>                          |

# Site 19: Harvington West

Unknown tonnage, 6Ha, access unknown, processing unknown



## Legend

|   |  |
|---|--|
|  | <b>Harvington West</b>                         |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Ancient Semi-Natural Woodland</b>           |



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Village Farmlands with Orchards' landscape type and is within the VE25b Land Cover Parcel. Guidance on this landscape type seeks to conserve and restore traditional orchards, with emphasis placed upon the fruit type and varieties associated with different localities; conserve and restore lines of hedgerow fruit trees; retain pattern of strongly nucleated villages with associated low dispersal of settlement in between; conserve and restore hedgerow structure with emphasis upon the primary hedgelines; conserve and enhance tree cover along watercourses; encourage opportunities for tree planting in and around villages; promote development of wide field margins for wildlife benefit; and promote management of roadside verges for wildlife benefit. It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations, but they could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site together with 'Harvington North'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact may exceed the landscape capacity.</p> <p>The nearest Area of Outstanding Natural Beauty is The Cotswolds, the closest part of which is 9.9km south-west of the site.</p> <p>There are no nationally-designated parks and gardens, or undesignated parks and gardens of local importance in close proximity to the site. The closest national site is the grade II* Rous Lench Court, which is 3.8km to the north-west.</p> <p>The closest unregistered historic park and garden of local importance is Wood Norton Hall, 2.4km to the south-west.</p> <p>Depending on how the site is developed, potential screening, and local</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is in an edge-of-village location, outside the current settlement boundary of Harvington. There are no properties within the site, but dwellings at Blakenhurst and the northern part of Harvington are close to the site's eastern boundary, with the closest dwelling being within 20m. Most of the dwellings close by do not 'face' the site area, but it would nevertheless be clearly visible, due to a lack of any intervening development and the local topography. There are also other scattered properties of Leys Road, but few dwellings to the north and west.</p>  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no SSSIs within or immediately adjoining the site, and none within 1.5km. The site falls within a SSSI impact risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are three within 1.5km the site boundary. Rough Hill (north) Wood Broadleaved Woodland is 800m to the west. Atch Lench Wood Ancient Semi-natural Woodland LWS is 1,110m to the north-west. Atch Lench Community Orchard, a Traditional Orchard LWS, is 1,140m to the north-west. Given the distances involved, and the presence of intervening development, roads, etc., it is considered unlikely that significant negative effects will arise as a result of extraction at this site.</p> <p>There is the potential for cumulative impacts to arise as a result of development of this site alongside 'Harvington North'. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive</p> | <p>The likely impacts on sensitive receptors should be assessed, and if negative impacts are likely, then appropriate measures should be considered. These may include ensuring vehicle movements will not give rise to adverse impacts such as noise and dust, and installing protective barriers and screening, etc.</p> |



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|  |  | <p>'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland within or adjacent to the site. The closest is an unnamed ASNW some 1,120m to the west. Part of Atchlench Wood is just beyond 1.5km to the north.</p>   |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>         Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |  | <p>There are no Scheduled Ancient Monuments (SAM) within the site, and none within 1.5km.</p> <p>There are no listed buildings within the site, but there are 30 within 1.5km of the site boundary. All of these are listed at grade II, except for the grade I listed Church of St James some 1,350m to the south-east. The closest listed building is Harvington Lodge, 390m to the north-east, and this is considered the only one likely to experience potential negative effects, although it is unclear whether these would be significant. It is not clear from desktop research whether there would be inter-visibility between Harvington Lodge and the site, but there is little by way of physical barriers between the two, and because the listed building is in the direction of the prevailing wind, this could increase the chances of dust and noise pollution being experienced and compromising its setting. Cumulative impacts could also arise if the nearby site of 'Harvington North' were to be developed at the same time.</p> <p>There are three Conservation Areas within 1.5km. Harvington Conservation Area is 990m to the south; Atch Lench Conservation Area is 1,400m to the north-west; and Norton (Norton &amp; Lenchwick) is 1,410m to the south.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |

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| <p><b>4: Material assets</b><br/>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 majority of the site (c.92%) falls within grade 2 agricultural land. The remainder, a small area in the very east of the site, falls within grade 3. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>  | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | -   | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. Depending on where the material is transported to, there could potentially be implications on the Evesham and/or Studley AQMAs. The whole urban area of Stratford upon Avon is also an AQMA. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Harvington North' and/or Harvington Green Street allotments', which would also be likely to use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the Evesham, Studley, and Stratford AQMAs.</p>  |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the</p>  | -/? | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and</p>   | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and</p>  |

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| <p>impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>  |          | <p>electric plant.<br/>The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.<br/>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in an edge-of-village location, around 4km from Evesham, which is the nearest major urban area. Its proximity to the river Avon (some 2.4km to the east, at its closest) could potentially offer water-borne transport, but this would require loading and unloading facilities and, unlike the Severn which is classed as a 'commercial' waterway, the Avon is classed as a 'cruising' waterway.<br/><br/>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>habitat links.<br/><br/>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>0</p> | <p>The site is not within any floodzone. The nearest floodzone, associated with the River Avon and its tributaries, is some 990m to the east. Areas of 1 in 1000 surface water flooding can be found along Leys Road to the south of the site, just extending into the site area. There is also 1 in 1000 surface water flooding beyond the site to the north.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>  |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable</p>   | <p>0</p> | <p>No public rights of way cross the site or follow its boundaries. The closest right of way is footpath 500, which runs roughly west to east above the site, within about 70m at its closest. Development of the site is unlikely to require the permanent or temporary closure or diversion of</p>  | <p>Restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to</p>                  |

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| <p>access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>                           |          | <p>this footpath, but could negatively affect its users or others within the vicinity, through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>                               | <p>-</p> | <p>The site is in an edge-of-village location, outside the current settlement boundary of Harvington. There are no properties within the site, but dwellings at Blakenhurst and the northern part of Harvington are close to the site's eastern boundary, with the closest dwelling being within 20m. There are also other scattered properties of Leys Road, but few dwellings to the north and west. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Harvington North' and/or (to a lesser extent) 'Harvington Green Street allotments'.</p> <p>There are no major accident hazard pipelines in or near to the site. There are no electricity transmission lines running through the site, although there is a line in close proximity to the site's western boundary, being less than 20m away at its closest.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | <p>0</p> | <p>There are no waste sites in close proximity to the site. The closest waste site is a waste transfer station in Middle Littleton, some 3.9km to the south-east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

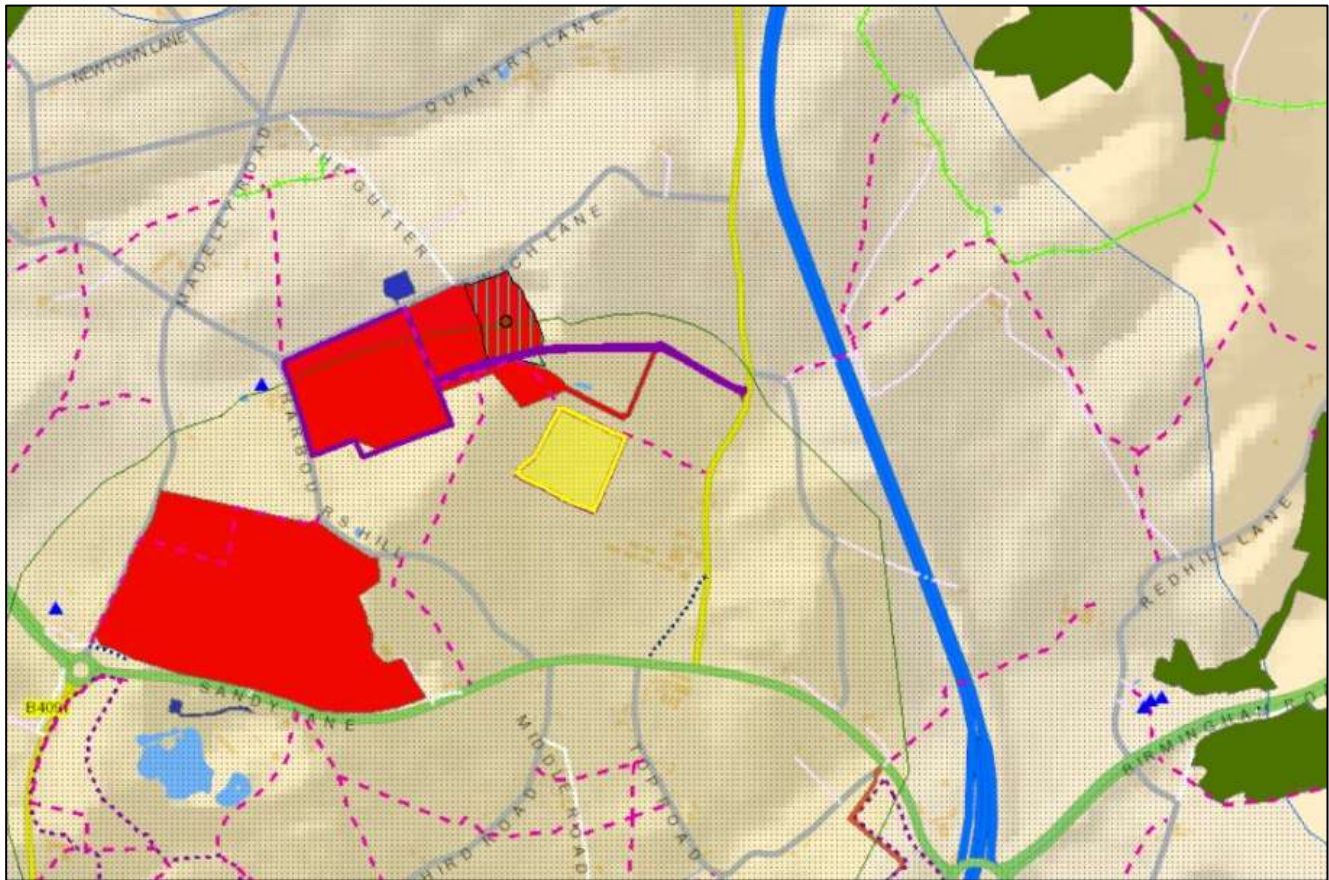
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| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | - | <p>There are no railheads in close proximity to the site. Its proximity to the river Avon (within some 2.4km to the east, at its closest) could potentially offer water-borne transport, but this would require loading and unloading facilities and, unlike the Severn which is classed as a 'commercial' waterway, the Avon is classed as a 'cruising' waterway.</p> <p>If road transport is used, the A46 is an advisory HGV route, and so is appropriate for this use, although smaller roads may be needed to access this. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Harvington North' and/or 'Harvington Green Street allotments', all of which would also be likely to see HGV movements along the same road network.</p> <p>The closest bus stop is around 670m to the east, on the B4088, with buses serving Evesham and Stratford. There is no railway station close to the site.</p> | <p>Transport movements by sustainable means should be maximised and, given the site's location relative to the river Avon, the potential for water-borne transport should be explored.</p> |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                             |
| <p><b>I3: Provision of housing</b><br/>Provide decent affordable housing for all, of the right quality and tenure</p>  | + | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>  |

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| and for local needs, in clean, safe and pleasant local environments. |  |  |  |
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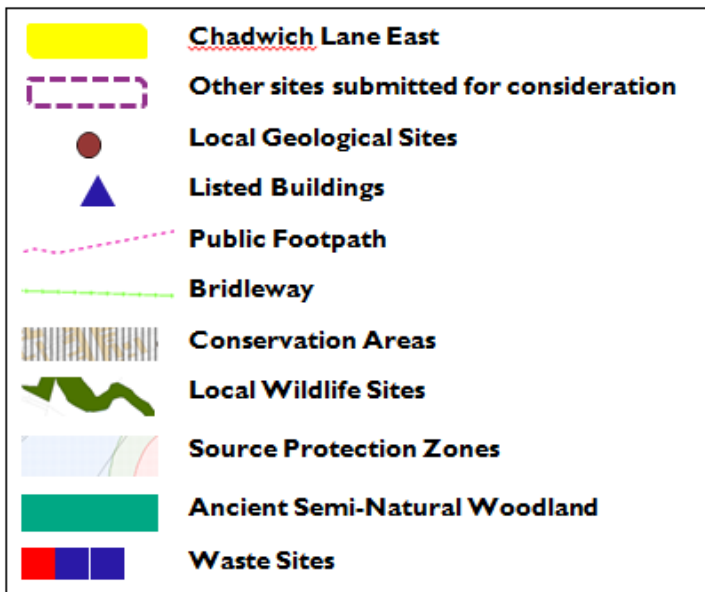


# Site 20: Chadwich Lane East

Unknown tonnage, 4Ha, access unknown, processing unknown



### Legend



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Ordnance Survey 100024230

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls wholly within the 'Principal Settled Farmlands' landscape type and the MW127g Land Cover Parcel. Guidance on the landscape type seeks to: conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations. The deliverability assessment confirms that the site is currently pasture, which would inevitably be lost, at least in the short to medium term, if the site were to be developed. But many of the other guidelines could potentially be maintained, and could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site alongside the nearby 'Chadwich Lane deepening'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty.</p> <p>There are no national parks and gardens or unregistered historic parks and gardens of local importance within or in close proximity to the site.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is quite well isolated from residential development, and is largely</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |



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|   |          | <p>screened by existing tree belts on all sides, although this is patchier to the north and is still maturing on the other sides. There are no properties within or immediately adjacent to the site boundary. There is a small group of houses and farm buildings along Money Lane to the east. There is also a farm and scattered dwellings along Harbours Hill to the west, and more of this scattered development south of Sandy Lane, so some limited visual impact is possible.</p>   |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>-</p> | <p>The 'Madeley Heath Pit' geological SSSI is within 110m of the north of the site. There are no other SSSIs within 1.5km of the site boundary. The site also falls within SSSI impact zones. Given the proximity of the SSSI, some degree of negative impact may be possible, although there is some dense tree cover that could act to reduce potential impacts.</p> <p>There are no Local Wildlife Sites (LWS) within the site, but there are four within 1.5km of the site boundary. Sling Pool and Marsh Wet Woodland Marsh Open Water - standing &amp; flowing LWS is 980m to the north-west. Waseley Hills Country Park, a Grassland LWS, is about 1,220m to the north-east. Great Farley and Dale Woods, a Broadleaved Woodland LWS, is 1,290m to the north. Broadmoor Wood &amp; Chadwich Manor Ponds is a Broadleaved Woodland LWS about 1,380m to the east. All three of these sites to the east are the other side of the M5 motorway. Given the distances involved, and the significant physical barriers of motorways and main roads, it is considered unlikely that significant negative impacts would be felt as result of extraction at this site. There may be some cumulative impacts as a result of development at the nearby 'Chadwich Lane deepening'. Although there are no particular wildlife sites which are obviously at risk of such cumulative impacts, cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even</p> | <p>The likely impacts on sensitive receptors, especially the Madeley Heath Pit SSSI, should be assessed, and if negative impacts are likely, then appropriate measures should be considered. These may include ensuring vehicle movements will not give rise to adverse impacts such as noise and dust, and installing protective barriers and screening, etc.</p> |

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|   |            | <p>simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>The Madeley Heath Local Geological Site is approximately 240m to the north and, as with the SSSI, the tree cover in place may act to reduce the likelihood of significant impacts. This, too, may be sensitive to cumulative effects if 'Chadwich Lane deepening' is developed at the same times as this site.</p> <p>Part of Great Farley Wood Ancient Semi Natural Woodland is 1,300m to the north.</p>   |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-/0</p> | <p>There are no scheduled ancient monuments (SAMs) within the site or in close proximity. The nearest SAM is the 'Moated site at Fairfield Court', some 1,390m to the south-west.</p> <p>There are 10 listed buildings within 1.5km of the site, with the closest being Lower Madeley Farmhouse, which is 640m to the west. All of the buildings except two are listed at Grade II; Chadwick Manor (1,430m to the south-east) and Fairfield Court (1,430m to the south-west) are listed at Grade II*. Given the distances involved, and the presence of intervening features (in most cases), it is considered unlikely that significant impacts would arise on these assets as a result of extraction at this site. Lower Madeley Farmhouse may experience some degree of impact resulting from inter-visibility, noise, dust, etc., but the level of any impact is difficult to determine from a desktop assessment.</p> <p>There are no Conservation Areas in close proximity to the site.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |
| <p><b>4: Material assets</b><br/>Ensure efficient use</p>   | <p>-</p>   | <p>Most of the site (around 95%) falls within grade 3 agricultural land, with the remainder of the site being grade 4. More detailed mapping, to show</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural</p>  |

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| <p>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>whether the Grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land.</p> <p>The site is wholly within the Green Belt.</p> <p>There are no village greens within or in close proximity of the site.</p>   | <p>land, if this is present. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  | -   | <p><b>Water quality</b><br/>All of the site falls within Source Protection Zones 2 and 3, associated with a water treatment works off Mill Lane, some 1,470m to the south. Any negative water quality impacts could be worsened through cumulative effects if this site were to be developed in parallel with 'Chadwich Lane deepening'.</p> <p><b>Air quality</b><br/>The site is not within or immediately close to any AQMA. But there are AQMAs in Bromsgrove and, notably, at Junction 1 of the M42. If material is moved by diesel HGV and passes these areas, air quality could be negatively impacted. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Chadwich Lane deepening', which would also be likely to use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs at Bromsgrove and M4 2J.</p>   |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the</p>   | -/? | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and</p>  | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and</p>   |

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| <p>impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>  |            | <p>electric plant. Onward transport is likely to be by diesel lorry. The location of the processing plant is unclear at this stage; if processing is carried out off-site, this could potentially lead to increased carbon emissions from additional transport. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is around 4km (as the crow flies) to the nearest major urban area (Bromsgrove town), but its position close to the motorway network gives many options for final onward movement, which may or may not be local.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p>  |
| <p><b>7: Flooding</b><br/>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>0</p>   | <p>No part of the site falls within a floodzone. The nearest floodzone is over 1.5km to the west, along the Fenn Brook. Maps suggest there are no areas of surface water flooding within the site.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities,</p>   | <p>0/?</p> | <p>No public rights of way pass through the site itself, although footpath 596 largely follows the site's northern boundary. It is unclear whether this right of way would require temporary or permanent closure or diversion. It may be that minerals extraction could interfere with enjoyment of the rights of way running through and around the site through visual intrusion, noise and/or air pollution, but this cannot be</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved</p> |

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| <p>regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p>  |   | <p>modelled at this stage, and the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely. Cumulative impacts on rights of way could arise if 'Chadwich Lane deepening' is developed at the same time as this site; although each site would only (potentially) affect one footpath (596 and 594, respectively), if both footpaths are affected this creates a more significant local issue.</p>   | <p>compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>                               | - | <p>The site is quite well isolated from residential development. There are no properties within or immediately adjacent to the site boundary. There is a small group of houses and farm buildings along Money Lane to the east. There is also a farm and scattered dwellings along Harbours Hill to the west, and more of this scattered development south of Sandy Lane. There is the potential for some degree of negative impact from dust, noise, vibrations, etc. to occur, although the closest dwelling is around 200m away, which will reduce the likelihood of any impacts being significant (although this may also depend on how the site is accessed). Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Chadwich Lane deepening'.</p> <p>Desktop research and/or consultation responses indicate that the site is within 140m of a gas pipeline safety zone.</p> <p>An electricity transmission line runs beyond the site, from south-west to the north-east, some 340m north-east of the site at its closest.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>Due to the site's location in an area of historic quarrying, there are several landfill sites in close proximity, as well as other waste management uses. Chadwich Lane Quarry landfill, and Chadwich Lane Quarry Extension landfill extend to the north and west of the site, within about 35m at their closest. The quarry site has largely been restored with landfill, with restoration of the extension ongoing. Chadwich Lane East falls within the 250m buffer zone of these sites. Minerals extraction is not considered to be an activity likely to compromise waste management functions, and nor is waste management likely to compromise minerals</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

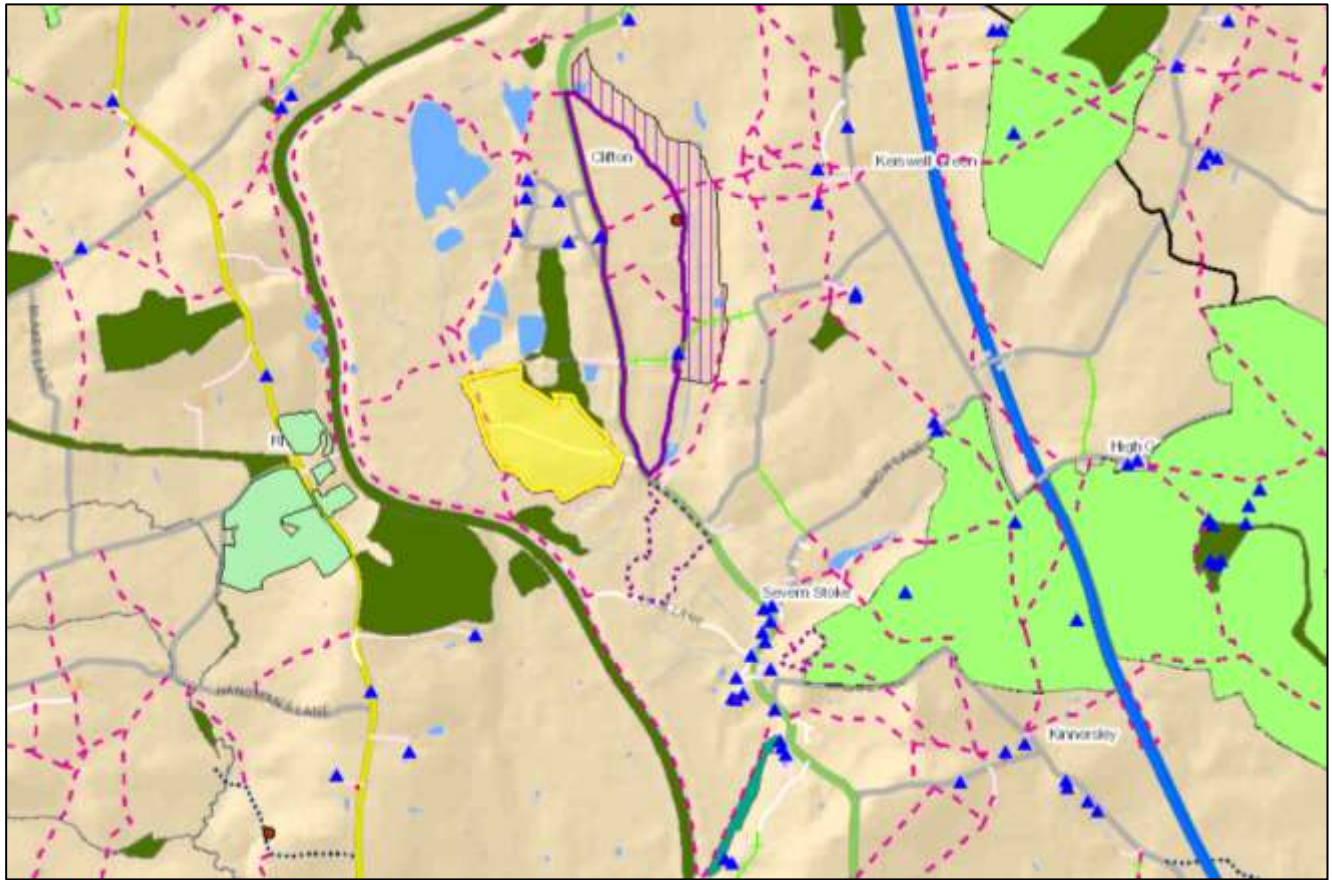
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|  |   | <p>extraction.</p> <p>Sandy Lane Landfill Site and biological treatment site lies to the south of Harbours Hill, south-west of the site, and is around 390m away at its closest. The Sandy Lane site is partly restored, but some waste uses are ongoing. There is a waste transfer station immediately the other side of Chadwich Lane, some 450m north-west of the site. A household recycling centre is off Quantry Lane/Money Lane, about 1,110m to the north. A further waste transfer station is south of Sandy Lane, some 980m south-west of the site, and there is a landfill and waste transfer station adjacent to the motorway, some 1,260m to the south-east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p> |  |
| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p> | - | <p>There are no railheads or freight-navigable watercourses in close proximity to the site. The presence of junction 4 of the M5 within 1.2km (as the crow flies), means that this will most likely be the conduit for minerals.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Chadwich Lane East', all of which would also be likely to see HGV movements along the same road network.</p> <p>The nearest bus stop is off Top Road, some 760m to the south of the site, with services to and from Halesowen. There are no railway stations in close proximity.</p>  | <p>Transport movements by sustainable means should be maximised.</p>   |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and</p>          | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |

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| <p>skills base whilst ensuring all share the benefits, urban and rural.</p>  |          | <p>at this stage.</p>  |   |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

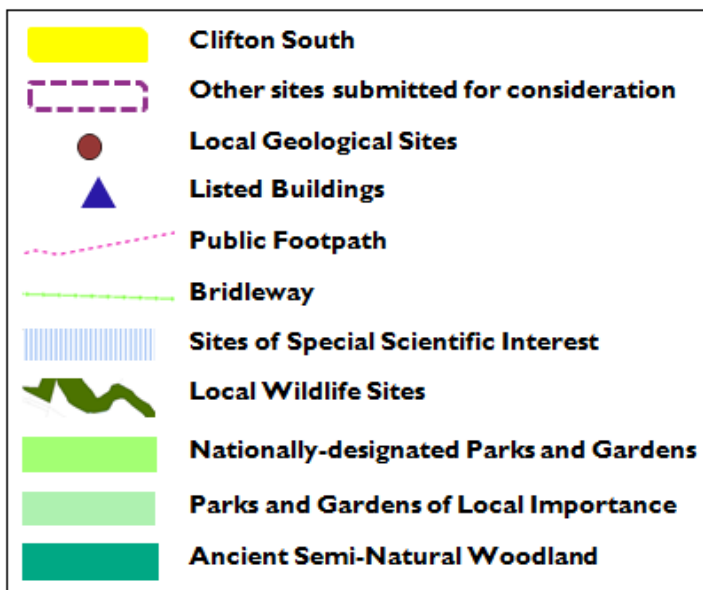


# Site 21: Clifton South

1,000,000t, 28Ha, access by conveyor,  
processing at existing plant at Clifton.



### Legend



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Ordnance Survey 100024230



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>Most of the site falls within the 'Settled Farmlands on River Terraces' landscape type, although a small part of the site's western area is within the 'Riverside Meadows' landscape type. The Land Cover Parcels within the site are split in the same proportion, with most of the site falling within MW65.1a, and a small part of the west falling within MW33.9a.</p> <p>Guidance on the 'Settled Farmlands on River Terraces' landscape type seeks to: retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows.</p> <p>Guidance on the 'Riverside Meadows' landscape type seeks to: retain the unity of the linear form of these landscapes; conserve all existing areas of permanent pasture; seek opportunities to encourage the conversion of arable land back to arable; conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; conserve existing wetland habitats and seek opportunities for further wetland habitat creation; avoid building or road construction works; avoid further drainage of waterside meadows; and explore opportunities to return to patterns and processes of natural flooding cycles where feasible.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations. The maintenance of cropping/horticultural land uses, for example, would clearly not be possible during extraction. But it may be possible to meet some of the guidelines, especially in the longer term, and these could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |           | <p>result of development of this site alongside others in the area ('Clifton East' and 'Severn Stoke, Sandford'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty. The Malvern Hills AONB is about 5.5km to the west, and the Cotswolds AONB is about 8.8km to the south-east.</p> <p>There are no national parks and gardens or unregistered historic parks and gardens of local importance within or in close proximity to the site. Croome Court grade I registered park and garden is 1,190m to the south-east, and Part of Rhydd Court unregistered historic park and garden of local importance is around 670m to the west, beyond the river Severn. Given the distances involved, it is not considered likely that extraction at the site would lead to significant negative impacts on these receptors.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road and motorway traffic, and those using rights of way.</p> <p>The site is in an isolated rural location. Being within the floodplain of the river Severn, and close to mineral workings, there are few residential properties in the area. There is a farm within the site itself, but beyond this the nearest dwellings are scattered properties along the A38, the closest being some 200m away.</p> |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and</p> | <p>--</p> | <p>There are no SSSIs within or adjoining the site. The only SSSI within 1.5km is Ashmoor Common, designated for its biological and geological interest, around 450m to the north-east. The site also falls within SSSI impact zones. There is no substantial intervening development between the site and the SSSI and, being in the prevailing wind direction from the site, it is possible that some negative impacts associated with dust, etc.</p>  | <p>The likely impacts on the Ashmoor Common SSSI and the adjoining and nearby LWS should be considered in detail, and if negative impacts are likely, then appropriate measures should be considered. These may include stand-offs</p> |

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| <p>geodiversity.</p> |  | <p>could be experienced, although the likely scale of any impact is unclear.</p> <p>There are no Local Wildlife Sites (LWS) within the site, but the Clifton Arles LWS, designated for its Grassland Marshland Swamp Wet Woodland, adjoins the site along its north-eastern boundary. This site is particularly sensitive to cumulative impact (see more below) given both the historic and ongoing extraction operations and the large clearing created for the plant site within the ancient woodland itself.</p> <p>There are eight other LWS within 1.5km:<br/>         Brickpits Plantation &amp; Sandford Pits Open Water - standing Wet Woodland LWS is 70m to the south; The River Severn Open Water – flowing LWS is 200m to the west; Cliffey Wood &amp; Cliffs Broadleaved Woodland LWS is 340m to the west; Guarlford Green &amp; Rhydd Green Grassland Marshland Open Water - ditch Scrub LWS is 920m to the west; Birch Arles Broadleaved Woodland LWS is 1,060m to the north-east; Dripshill Wood Broadleaved Woodland LWS is 1,090m to the west; Pool &amp; Mere Brooks Open Water – flowing LWS is 1,400m to the west; and The Bogs Open Water - standing Swamp LWS is 1,430m to the north.</p> <p>Given the close proximity of these assets to the site, and the fact that there is relatively limited intervening development, it is considered likely that some degree of negative impact is possible for the first four of these, at the least. For those to the west, these impacts could be worsened through the cumulative effects of also developing the nearby 'Severn Stoke, Sandford' site, and cumulative effects could potentially be felt, in particular on Clifton Arles, as result of also developing 'Clifton East'. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles</p> | <p>within the site, installing protective barriers and screening, etc.</p> |
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|  |            | <p>across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>The Ashmoor Common Local Geological Site is some 980m to the north, and is unlikely to experience negative impacts as a result of extraction here.</p> <p>There are no Areas of Ancient Semi Natural Woodland (ASNW) within the site, but Clifton Arles ASNW does abut part of the site's eastern boundary. There are a further three ASNW within 1.5km of the site: part of Dripshill Wood ASNW is 1,270m to the west; Birch Arles ASNW is 1,070m to the east; and Severn Bank wood is 1,440m to the south.</p>  |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-/?</p> | <p>There are no scheduled ancient monuments (SAMs) within the site or in close proximity. The only SAM within 1.5km is the 'Churchyard cross in St Denys's churchyard', which is about 1,190m to the south-east.</p> <p>There are no listed buildings within or immediately adjoining the site, but there are 30 within 1.5km. All of these are listed at grade II, except for the Grade I 'Panorama', some 1,490m to the south-east, and the grade II* 'Church of St Denys' in Severn Stoke, 1,160m to the south-east. The closest listed building is 520m to the north east. It is unlikely, given the distances involved, local topography, and existing screening, that there would be significant inter-visibility between this building and the site, but it is possible that some negative impact on its setting could arise through dust, noise, etc., especially as the building lies in the prevailing wind direction from the site. Cumulative impacts could also arise if nearby sites ('Clifton East' and 'Severn Stoke, Sandford') were to be developed at the same time.</p> <p>There are no Conservation Areas in close proximity to the site.</p> <p>The site is located within a landscape associated with an extensive</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |

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|   |     | historic watermeadow. Historic water management structures and features are potentially associated with field boundaries where there has been the strongest survival of historic features outside arable land.   |  |
| <p><b>4: Material assets</b><br/>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 majority of the site, in the north and east, falls within grade 3 agricultural land. A smaller part of the site (around 31%), to the south and west, falls within grade 2. A very small area in the eastern-most part of the site (less than 2% of the site area) falls within grade 1. More detailed mapping, to show whether the grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. But, given the presence of grade 1 and 2 land, there would most likely be a loss of at least some best and most versatile agricultural land in the short-medium term.</p> <p>The site is wholly within the Green Belt.</p> <p>There are no village greens within or in close proximity of the site.</p> | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | -   | <p><b>Water quality</b><br/>The site is not within or near to any Source Protection Zone.</p> <p><b>Air quality</b><br/>The site is not within or immediately close to any AQMA. Any negative air quality impacts that do arise could be worsened through cumulative emissions if this site were to be developed in parallel with 'Clifton East' and/or 'Severn Stoke, Sandford'. The vehicles from all of these sites would be likely to use the same road network.</p>   | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken.</p>   |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of</p>   | -/? | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will</p>  | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the</p>   |

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| <p>and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable energy and low-carbon sources.</p>  |  | <p>be excavated by diesel-powered equipment, and processed by diesel and electric plant.<br/>                 The proposed site would use existing processing plant at Clifton quarry. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.<br/>                 The site's location, within 210m of the river Severn at its closest point, may offer the potential for water-borne transport, which would be more sustainable than road movements, but this will depend on the availability of loading/unloading facilities.<br/>                 Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is around 4km (as the crow flies) east of Malvern, and around 6km south of Worcester, which are the nearest major urban areas, but its position close to the motorway network gives many options for final onward movement, which may or may not be local.<br/><br/>                 There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>opportunity to provide for cooling and habitat links.<br/><br/>                 All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>                 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>A small part of the site, just within the eastern boundary, falls within Floodzone 3. The majority of the site falls within Floodzone 2. Both Floodzones are associated with the nearby river Severn. There are small isolated areas of 1 in 1000 surface water flooding in the north, north-east and east of the site, with some smaller areas of 1 in 30 and 1 in 100 surface water flooding within these.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>  |

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| <p><b>8: Access to Services</b><br/>                 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 footpath 529 passes through the site roughly north to south, through a short section of the very west of the site. It also follows part of the western site boundary. Footpath 536 runs roughly south-west to north-east, to the west of the site, within about 100m at its closest. Development of the site could require the permanent or temporary closure or diversion of footpath 529, and it may be that minerals extraction could interfere with enjoyment of these rights of way through visual intrusion, noise and/or air pollution, but this cannot be modelled at this stage, and the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>  | <p>The site is in an isolated rural location. Being within the floodplain of the river Severn, and close to mineral workings, there are few residential properties in the area. There is a farm within the site itself, but beyond this the nearest dwellings are scattered properties along the A38, the closest being some 200m away. Nevertheless, there is the potential for health and amenity issues to arise on these receptors as a result of noise, dust and vibration. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Clifton East' and/or 'Severn Stoke, Sandford'.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> <p>There are no electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3)</p>   | <p>0</p>  | <p>There are no waste sites within 1.5km of the site boundary.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

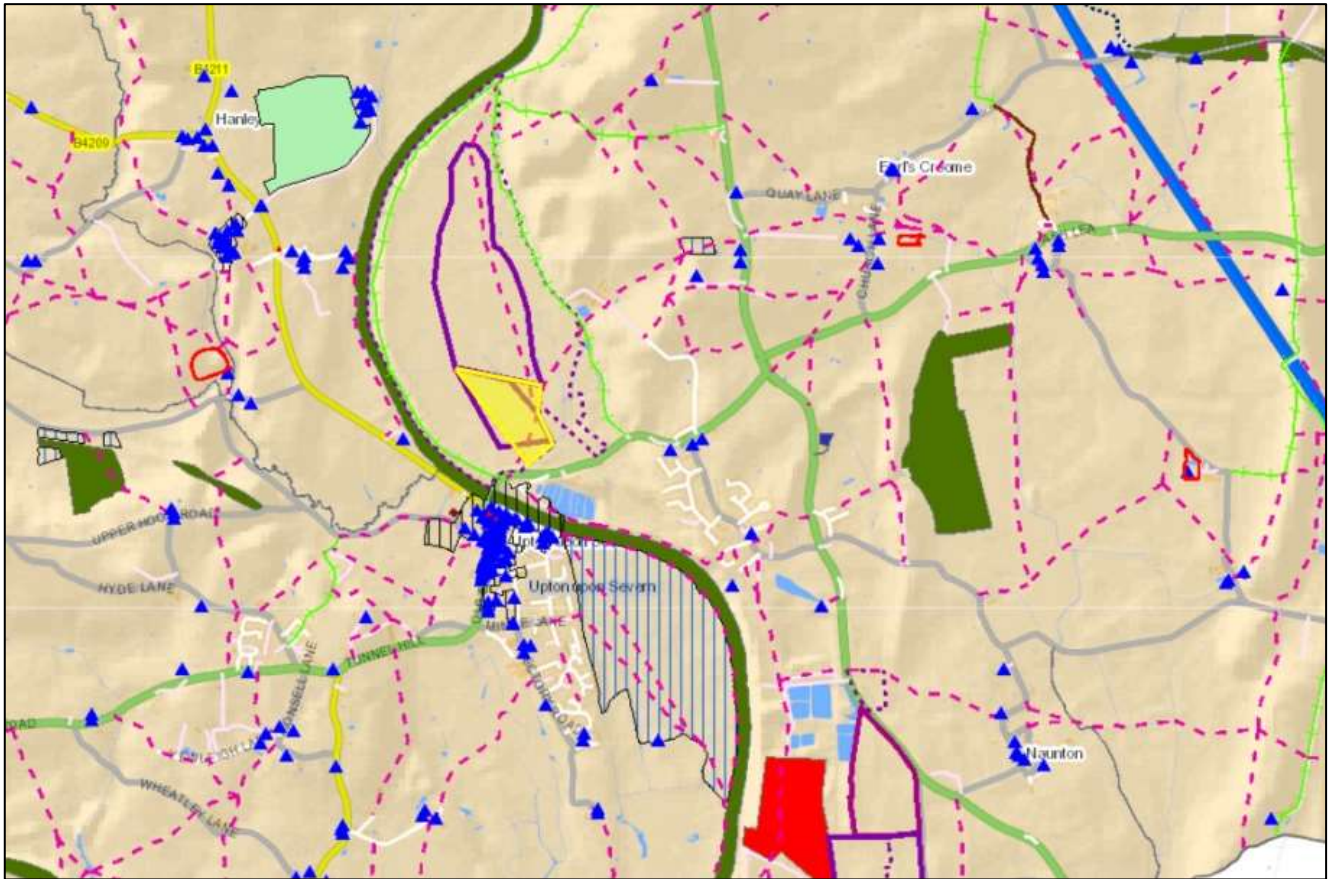
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| <p>recycling and composting, 4) recovery, 5) disposal.</p>   |   |   |  |
| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | - | <p>There are no railheads in close proximity to the site. The site's location within some 210m of the river Severn means there may be opportunities for water-borne transport of excavated material. However, being accessible to the M5 means that this will most likely be the conduit for minerals. As the A38 is an advisory route for HGVs, this would provide a suitable means to access the motorway. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Clifton East' and/or Severn Stoke, Sandford'. In fact, cumulative transport impacts could arise on all site using the A38 for HGV movements.</p> <p>There is a bus stop along the A38, almost adjacent to the site's eastern boundary, with services to and from Worcester and Upton. There is no railway station in close proximity.</p> | <p>Transport movements by sustainable means, including water-borne transport using the river Severn, should be maximised.</p>                                  |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>Provide decent affordable housing for all, of the right quality and tenure</p>  | + | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |



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| and for local needs, in clean, safe and pleasant local environments. |  |  |  |
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# Site 22: Ryall Court Farm

400,000t, 10Ha, access by water, processing off-site at Ryall House Farm.



### Legend

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|  | <b>Ryall Court Farm</b>                        |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Scheduled Ancient Monuments</b>             |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Sites of Special Scientific Interest</b>    |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Parks and Gardens of Local Importance</b>   |
|  | <b>Waste Sites</b>                             |



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls wholly within the 'Riverside Meadows' landscape type and the MW33.10b Land Cover Parcel. Guidance on the landscape type seeks to: retain the unity of the linear form of these landscapes; conserve all existing areas of permanent pasture; seek opportunities to encourage the conversion of arable land back to arable; conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; conserve existing wetland habitats and seek opportunities for further wetland habitat creation; avoid building or road construction works; avoid further drainage of waterside meadows; explore opportunities to return to patterns and processes of natural flooding cycles where feasible. It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations, but it is likely that some of these characteristics could not be maintained during operations. In the longer term, they could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty. The Malvern Hills AONB is 4.9km to the west, and the Cotswolds AONB is 7.1km to the east. The site may be visible from higher ground in the Malvern Hills AONB, but is at such a distance that any impacts are unlikely to be considered significant.</p> <p>There are no national parks and gardens or unregistered historic parks and gardens of local importance within or in close proximity to the site. Croome Court Grade I park and garden is about 2.3km to the north.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site, whilst not including or being surrounded by development, is close to Upton upon Severn and clearly visible from the A4104. The</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |  | <p>closest dwelling is about 110m to the south of the site, and there are various scattered dwellings around the marina and the A4104. The more densely built-up areas of Upton and Holly Green begin approximately 260m south and 490m east, respectively. There is the potential for visual impact to occur on many of these receptors, but the likely scale of this impact is not clear at this stage.</p> <p>Cumulative landscape impacts could arise if this site were to be developed in parallel with 'Ryall North', which would extend the visual impact, in particular to receptors to the north of Ryall Court Farm.</p>  |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> |  | <p>There are no SSSIs within or adjoining the site. There are two SSSIs within 1.5km, both designated for their biological interest: Upton Ham SSSI is 390m south-east, the other side of the river Severn, and Earl's Croome Meadow SSSI is 1,040m to the north-east. The site also falls within SSSI impact zones. Although there could be some impacts, given the distances involved and the intervening development, significant negative effects on either SSSI are considered unlikely.</p> <p>There are no Local Wildlife Sites (LWS) within the site, but there are three LWS within 1.5km of the site boundary: the River Severn Open Water – flowing LWS is within 180m to the south-west at its closest; Pool &amp; Mere Brooks Open Water – flowing LWS is 370m to the west; and Brotheridge Green Disused Railway is a Broadleaved Woodland Grassland LWS 1,140m to the west. Given the distances and intervening development, it is likely that only the river Severn could potentially experience impacts arising from extraction at this site. The scale of any impact is not clear at this stage. Cumulative impacts could arise if this site were to be developed in parallel with 'Ryall North', which would create a much larger area from which potential negative impacts could be felt on the river Severn. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath</p> | <p>The likely impacts on sensitive receptors, including the river Severn LWS, should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p> |

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|  |  | <p>Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>There are two Areas of Ancient Semi Natural Woodland (ASNW) within 1.5km of the site, both to the north. Barnes's Rough ASNW is 1,320m away, and Part of Cliff Wood ASNW is 1,450m away. Both of these sites are considered to be a sufficient distance away from the site to be unlikely to experience significant negative impacts.</p>  |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |  | <p>There are no scheduled ancient monuments (SAMs) within the site, but there are four within 1.5km. Both the 'Tower of the old church' and the 'Upton cross in old churchyard' are about 300m to the south in the town of Upton. The 'Boundary cross at entrance to Quay Lane' is 1,030m to the north-west, and the 'Ringwork known as Hanley Castle 520m south of the Church of St. Mary' is 1,090m to the west. It is considered that only the 'Tower of the old church' has the potential to experience negative impacts, as the site may be visible from the top of the tower. The assets in Upton immediately around the tower are generally surrounded by urban development and somewhat isolated from potential impacts from the site.</p> <p>There are some 163 listed buildings within 1.5km of the site. The high number is due to the densely-packed groups of historic buildings within nearby Upton-upon-Severn and Hanley Castle. Most of these buildings are listed at grade II, with four listed at grade II*. None are listed at grade I. The closest listed buildings are those fronting the water in the other side of the river Severn in Upton, which begin around 270m to the south.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |

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|   |            | <p>Those listed buildings in Upton itself that are closest to the river could be negatively affected, although they are the other side of the bridge, which would act as a barrier of sorts to some of these impacts. Whilst the majority of buildings may not be directly impacted, The Pool House, which sits on the western bank of the Severn, is within 400m, and, depending on the visual and other impacts (noise, dust, etc.), its setting may be affected by extraction at this site. There could be cumulative impacts on the Pool House if this site were to be developed in parallel with 'Ryall North'.</p> <p>The Upton-upon-Severn Conservation Area extends to the north of the Severn, and is within 90m of the south of the site. Extraction at this site could have a negative impact on the setting of the conservation area.</p> |  |
| <p><b>4: Material assets</b><br/>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>0</p>   | <p>The entire site falls within grade 4 agricultural land. Development here would therefore have no negative impact on best and most versatile agricultural land.</p> <p>The site is not in the Green Belt.</p> <p>There is a village green about 480m south, in Upton-upon-Severn.</p>   | <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p>                                    |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>0/-</p> | <p><b>Water quality</b><br/>There are no Source Protection Zones within close proximity of the site.</p> <p><b>Air quality</b><br/>The site is not within or close to any AQMA. But there are AQMAs in</p>  | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken.</p> |

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|  |            | <p>Tewkesbury and Worcester. If material is moved by diesel HGV and passes these areas, air quality could be negatively impacted. These impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Ryall North', which would be likely to also use HGVs and to pass along the same road network.</p>  | <p>Consideration should be given to potential impacts on the AQMAs at Worcester and Tewkesbury.</p>  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would use existing off-site processing plant at Ryall House Farm. Water transport along the river Severn is likely to be used to move material to and from processing. Conveyors may offer a more climate-change friendly option for moving material to and from any river loading site than HGVs.</p> <p>Onward transport post-processing is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is not close to any major urban area, but its position close to the motorway network gives many options for final onward movement, which may or may not be local.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks</p>                                    | <p>-</p>   | <p>The site is wholly within floodzones 2 and 3, associated with the river Severn. There is a small area of 1 in 1000 surface water flooding in the east of the site, just west of the drain.</p> <p>In a planning sense, sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended and, as such, the presence of Flood Zone 3 will attract a minor negative rating. If any part of Flood</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |



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| <p>or contribute to surface water flooding in all other areas.</p>  |           | <p>Zone 3b falls within the site, there is also a need to ensure no net loss of floodplain storage and no impedance of water flows or increase of flood risk elsewhere. In the short to medium term, the site's ability to act as flood storage may be compromised by the need to ensure a workable site. This may be a relatively minor impact, but may still be felt until site restoration, which is likely to restore the site's flood-plain function.</p>   |  |
| <p><b>8: Access to Services</b><br/>                 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>Footpath 511 runs roughly north to south through the site's south-eastern section. Footpaths 501 and 508 run north from the site, being within 15m of the site's north-eastern boundary at their closest. Bridleway 508 roughly follows the river Severn south-west of the site, within 130m at its closest.</p> <p>It is unclear whether footpath 511 would require temporary or permanent closure or diversion. It may be that minerals extraction could interfere with enjoyment of these rights of way through visual intrusion, noise and/or air pollution, but this cannot be modelled at this stage, and the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p> <p>Cumulative impacts could arise on footpaths 508 and 501 if this site were to be developed in parallel with 'Ryall North'.</p> | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>  | <p>The site, whilst not including or being surrounded by development, is close to Upton upon Severn and clearly visible from the A4104. The closest dwelling is about 110m to the south of the site, and there are various scattered dwellings around the marina and the A4104. These receptors could all potentially experience dust and noise impacts resulting from extraction at this site. The more densely built-up areas of Upton and Holly Green begin approximately 260m south and 490m east, respectively. Cumulative impacts could arise, particularly in relation to dwellings to the east, if this site were to be developed in parallel with 'Ryall North'.</p> <p>There are no gas pipeline safety zones within or near to the site.<br/>                 An electricity transmission line runs through the very north of the site,</p>                               | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

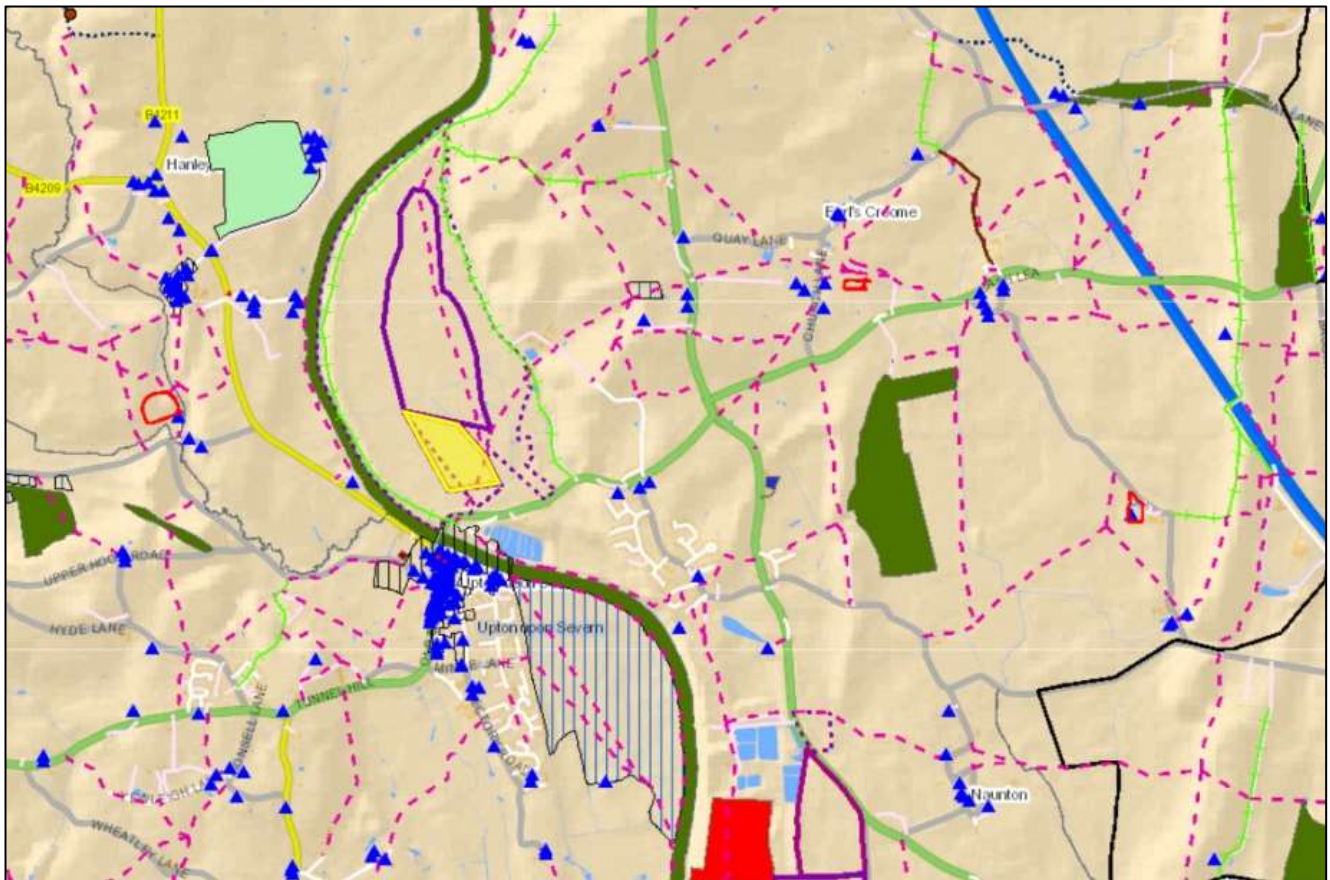


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|  |   | broadly following the entire length of the site's northern boundary line.   |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are two waste sites within 1.5km of the site, Upton household recycling centre is about 410m to the south-west, and there is a waste transfer station 1,290m to the east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site, but there are loading and unloading facilities on the river Severn within close proximity, and additional facilities proposed as part of planning applications for this area. This means that water transport is likely to be used to move minerals to the processing plant. Onward movement, however, is likely to be by HGV. The site is within 5km (as the crow flies) of junction 1 of the M50 meaning that this will most likely be the conduit for minerals. Whilst the A38 is an advisory route for HGVs, other more minor roads may not be.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ryall North', which would also be likely to see HGV movements along the same road network.</p> <p>There are bus stops either side of the river Severn, with the closest within 400m of the site boundary. The routes serve Worcester and (from the west of the Severn) also Malvern and Tewkesbury. The site is a walkable distance from the centre of Upton-upon-Severn, which, as a town, is likely to continue to be well-served by buses even if some routes/bus stop locations are changed. There is no railway station in close proximity.</p> | <p>Transport movements by sustainable means, including water-borne transport using the river Severn, should be maximised.</p>  |

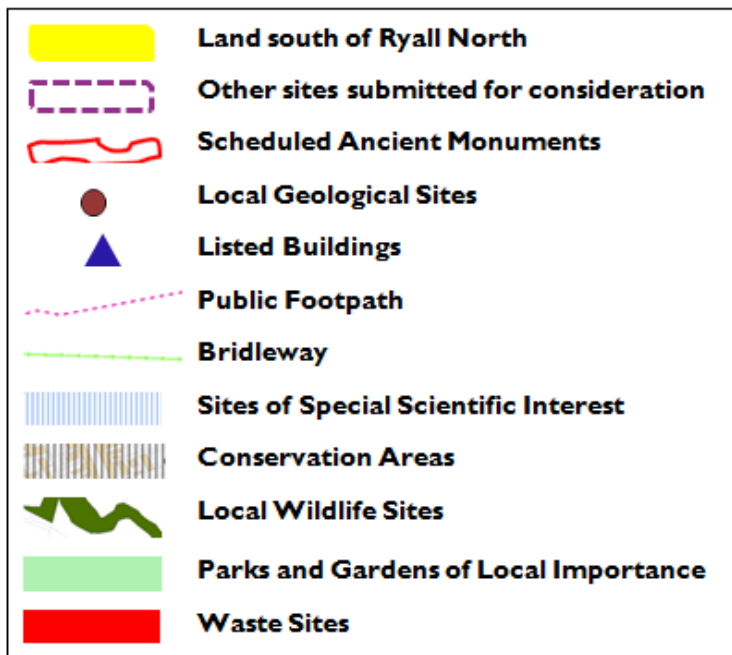
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| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |

# Site 23: Land south of Ryall North

300,000t, 9Ha, access by water, processing off-site at Ryall House Farm.



### Legend



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Ordnance Survey 100024230

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>This site falls wholly within the 'Riverside Meadows' landscape type and the MW33.10b Land Cover Parcel. Guidance on the landscape type seeks to: retain the unity of the linear form of these landscapes; conserve all existing areas of permanent pasture; seek opportunities to encourage the conversion of arable land back to arable; conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; conserve existing wetland habitats and seek opportunities for further wetland habitat creation; avoid building or road construction works; avoid further drainage of waterside meadows; explore opportunities to return to patterns and processes of natural flooding cycles where feasible. It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations, but it is likely that some of these characteristics would not be maintained during operations. In the longer term, they could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty. The Malvern Hills AONB is 4.9km to the west, and the Cotswolds AONB is 7.1km to the east.</p> <p>There are no national parks and gardens or unregistered historic parks and gardens of local importance within or in close proximity to the site. Croome Court Grade I park and garden is about 2.3km to the north.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site, whilst not including or being surrounded by development, is close to Upton upon Severn and clearly visible from the A4104. The closest dwelling is about 170m to the south of the site, and there are various scattered dwellings around the marina and the A4104. The more</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |  | <p>densely built-up areas of Upton and Holly Green begin approximately 300m south and 480m east, respectively.</p> <p>There is the potential for visual impact to occur on many of these receptors, but the likely scale of this impact is not clear at this stage.</p> <p>Cumulative landscape impacts could arise if this site were to be developed in parallel with 'Ryall North', which would extend the visual impact, in particular to receptors to the north of Ryall Court Farm.</p>   |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> |  | <p>There are no SSSIs within or adjoining the site. There are two SSSIs within 1.5km, both designated for their biological interest: Upton Ham SSSI is 460m south-east, the other side of the river Severn, and Earl's Croome Meadow SSSI is 1,040m to the north-east. The site also falls within SSSI impact zones. Although there could be some impacts, given the distances involved and the intervening development, significant negative effects on either SSSI are considered unlikely.</p> <p>There are no Local Wildlife Sites (LWS) within the site, but there are three LWS within 1.5km of the site boundary: the River Severn Open Water – flowing LWS is within 190m to the south-west at its closest; Pool &amp; Mere Brooks Open Water – flowing LWS is 310m to the west; and Brotheridge Green Disused Railway is a Broadleaved Woodland Grassland LWS 1,180m to the west. Given the distances and intervening development, it is likely that only the river Severn could potentially experience impacts arising from extraction at this site. The scale of any impact is not clear at this stage. Cumulative impacts could arise if this site were to be developed in parallel with 'Ryall North', which would create a much larger area from which potential negative impacts could be felt on the river Severn. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance;</p> | <p>The likely impacts on sensitive receptors, including the river Severn LWS, should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p> |

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|  |  | <p>even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>There are two Areas of Ancient Semi Natural Woodland (ASNW) within 1.5km of the site, both to the north. Barnes's Rough ASNW is 1,320m away, and Part of Cliff Wood ASNW is 1,450m away. Both of these sites are considered to be a sufficient distance away from the site to be unlikely to experience significant negative impacts.</p>   |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>         Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |  | <p>There are no scheduled ancient monuments (SAMs) within the site, but there are four within 1.5km. Both the 'Tower of the old church' and the 'Upton cross in old churchyard' are to south in the town of Upton, about 330m and 350m away, respectively. The 'Boundary cross at entrance to Quay Lane' is 1,030m to the north-west, and the 'Ringwork known as Hanley Castle 520m south of the Church of St. Mary' is 1,090m to the west. It is considered that only the 'Tower of the old church' has the potential to experience negative impacts, as the site may be visible from the top of the tower. The assets in Upton immediately around the tower are generally surrounded by urban development and are somewhat isolated from potential impacts from the site.</p> <p>There are some 161 listed buildings within 1.5km of the site. The high number is due to the densely-packed groups of historic buildings within nearby Upton-upon-Severn and Hanley Castle. Most of these buildings are listed at grade II, with four listed at grade II*. None are listed at grade I. The closest listed buildings are those fronting the water in the other side of the river Severn in Upton, which begin around 280m to the south. Those listed buildings in Upton itself that are closest to the river could be negatively affected, although they are the other side of the bridge,</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |



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|   |            | <p>which would act as a barrier of sorts to some of these impacts. Whilst the majority of buildings may not be directly impacted, The Pool House, which sits on the western bank of the Severn, is within 390m, and, depending on the visual and other impacts (noise, dust, etc.), its setting may be affected by extraction at this site. There could be cumulative impacts on the Pool House if this site were to be developed in parallel with 'Ryall North'.</p> <p>The Upton-upon-Severn Conservation Area extends to the north of the Severn, and is within 150m of the south of the site. Extraction at this site could have a negative impact on the setting of the conservation area.</p>  |   |
| <p><b>4: Material assets</b><br/>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>0</p>   | <p>Almost the entire site falls within grade 4 agricultural land, with a proportionally tiny fraction in the south-western corner (less than 0.2% of the site area) falling within grade 3. More detailed mapping, to show whether this is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land, but the area in question is so negligible as to be considered insignificant. Overall, development here would not have a significant negative impact on best and most versatile agricultural land.</p> <p>The site is not in the Green Belt.</p> <p>There is a village green about 490m south, in Upton-upon-Severn.</p> | <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p>   |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>0/-</p> | <p><b>Water quality</b><br/>There are no Source Protection Zones within close proximity of the site.</p> <p><b>Air quality</b><br/>The site is not within or close to any AQMA. But there are AQMAs in Tewkesbury and Worcester. If material is moved by diesel HGV and passes these areas, air quality could be negatively impacted. These</p>  | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs in Worcester and</p> |

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|  |            | <p>impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Ryall North', which would be likely to also use HGVs and to pass along the same road network.</p>   | <p>Tewkesbury.</p>   |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would use existing off-site processing plant at Ryall House Farm. Water transport along the river Severn is likely to be used to move material to and from processing. Conveyors may offer a more climate-change friendly option for moving material to and from any river loading site than HGVs.</p> <p>Onward transport post-processing is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is not close to any major urban area, but its position close to the motorway network gives many options for final onward movement, which may or may not be local.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks or contribute to</p>                   | <p>-</p>   | <p>The site is wholly within floodzones 2 and 3, associated with the river Severn. There is a small area of 1 in 1000 surface water flooding in the east of the site, just west of the drain.</p> <p>In a planning sense, sand and gravel working is 'water-compatible development' and, as such, is appropriate in every flood zone. However, the sequential test is still recommended and, as such, the presence of Flood Zone 3 will attract a minor negative rating. If any part of Flood Zone 3b falls within the site, there is also a need to ensure no net loss of</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |



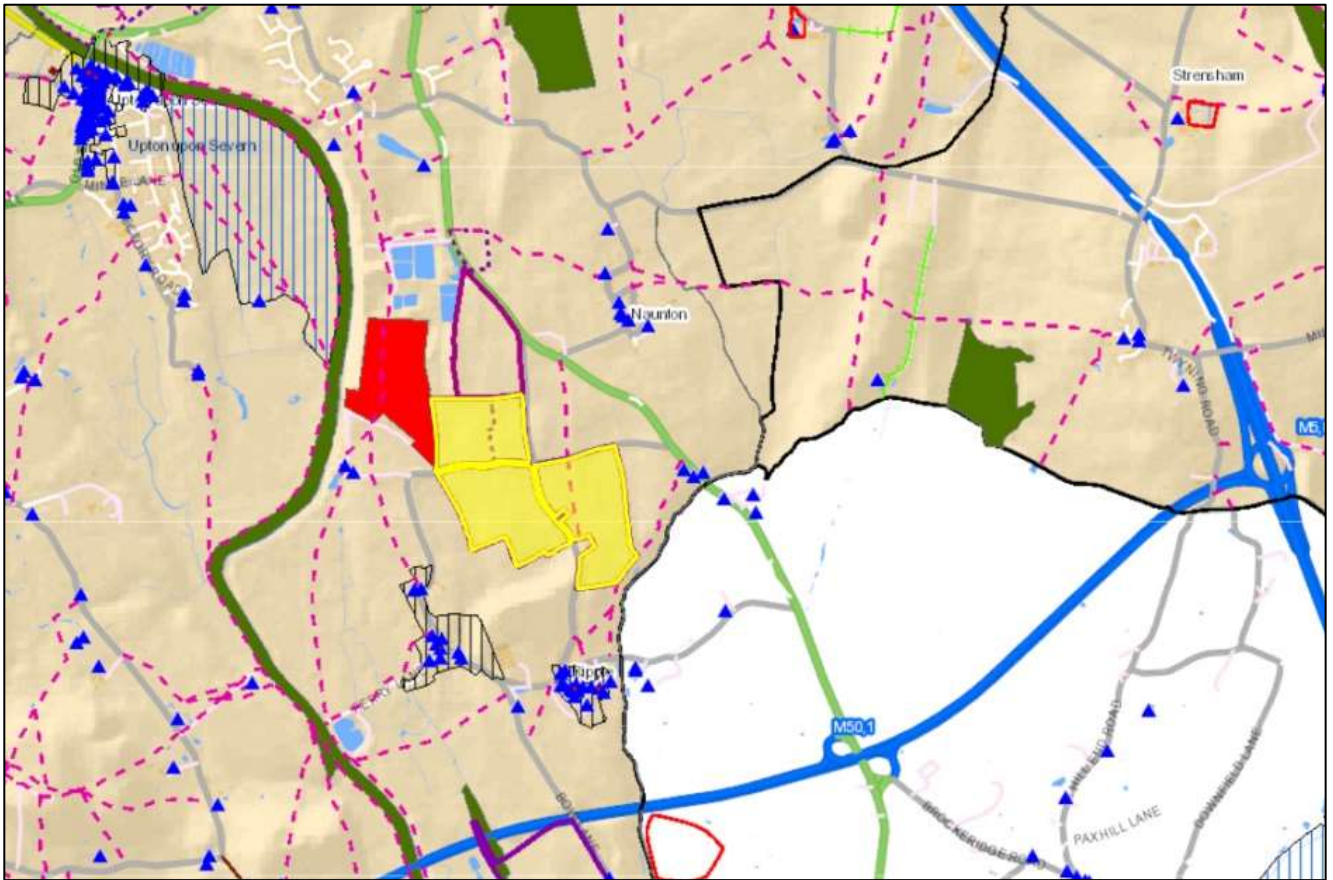
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| <p>surface water flooding in all other areas.</p>   |           | <p>floodplain storage and no impedance of water flows or increase of flood risk elsewhere. In the short to medium term, the site's ability to act as flood storage may be compromised by the need to ensure a workable site. This may be a relatively minor impact, but may still be felt until site restoration, which is likely to restore the site's flood-plain function.</p>   |  |
| <p><b>8: Access to Services</b><br/>                 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>Footpath 511 runs roughly north to south through the site's south-eastern section. Footpaths 501 and 508 run north from the site, being within 15m of the site's north-eastern boundary at their closest. Bridleway 508 roughly follows the river Severn south-west of the site, within 140m at its closest.</p> <p>It is unclear whether footpath 511 would require temporary or permanent closure or diversion. It may be that minerals extraction could interfere with enjoyment of these rights of way through visual intrusion, noise and/or air pollution, but this cannot be modelled at this stage, and the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely. Cumulative impacts could arise on footpaths 508 and 501 if this site were to be developed in parallel with 'Ryall North'.</p> | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>  | <p>The site, whilst not including or being surrounded by development, is close to Upton upon Severn and clearly visible from the A4104. The closest dwelling is about 170m to the south of the site, and there are various scattered dwellings around the marina and the A4104. These receptors could all potentially experience dust and noise impacts resulting from extraction at this site. The more densely built-up areas of Upton and Holly Green begin approximately 300m south and 480m east, respectively. Cumulative impacts could arise, particularly in relation to dwellings to the east, if this site were to be developed in parallel with 'Ryall North'.</p> <p>There are no gas pipeline safety zones within or near to the site.<br/>                 An electricity transmission line follows the length of the site's northern boundary line.</p>        | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are two waste sites within 1.5km of the site, Upton household recycling centre is about 370m to the south-west, and there is a waste transfer station 1,300m to the east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site, but there are loading and unloading facilities on the river Severn within close proximity, and additional facilities proposed as part of planning applications for this area. This means that water transport is likely to be used to move minerals to the processing plant. Onward movement, however, is likely to be by HGV. The site is within 5km (as the crow flies) of junction 1 of the M50 meaning that this will most likely be the conduit for minerals. Whilst the A38 is an advisory route for HGVs, other more minor roads may not be.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ryall North', which would also be likely to see HGV movements along the same road network.</p> <p>There are bus stops either side of the river Severn, with the closest within 500m of the site boundary. The routes serve Worcester and (from the west of the Severn) also Malvern and Tewkesbury. The site is a walkable distance from the centre of Upton-upon-Severn, which, as a town, is likely to continue to be well-served by buses even if some routes/bus stop locations are changed. There is no railway station in close proximity.</p> | <p>Transport movements by sustainable means, including water-borne transport using the river Severn, should be maximised.</p>  |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven</p>  | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                         |

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| <p>economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>  |          | <p>non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   |   |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 24: Land north east of Uckinghall Lane

1,000,000t, 51Ha, access by road, processing off-site at Ryall House Farm.



### Legend

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|  | Land north east of <u>Uckinghall Lane</u> |
|  | Other sites submitted for consideration   |
|  | Scheduled Ancient Monuments               |
|  | Listed Buildings                          |
|  | Public Footpath                           |
|  | Bridleway                                 |
|  | Sites of Special Scientific Interest      |
|  | Conservation Areas                        |
|  | Local Wildlife Sites                      |
|  | Waste Sites                               |



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Settled Farmlands on River Terrace' landscape type and the MW69c Land Cover Parcel.<br/>Guidance on this landscape type seeks to retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows.<br/>With careful working, it may be possible to maintain some of these landscape characteristics during minerals operations, and all of the characteristics should help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in close proximity ('Ryall East' and 'Land opposite Ryall Quarry entrance'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity (especially as the area is already partly in active/restored minerals use).</p> <p>The site lies between the Malvern Hills AONB (around 7.0km to the west) and the Cotswolds AONB (4.8km to the east).</p> <p>There are no nationally-designated parks and gardens, or undesignated parks and gardens of local importance in close proximity to the site. The closest national site is Croome Court Grade I listed park and garden, about 4.9km to the north.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using the river Severn, and those</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>using rights of way.</p> <p>The site is in a rural location. While there are no dwellings within the site boundary, there is a single property and a small group of properties off School Lane that are effectively surrounded by the site in most directions. There are various scattered groups of properties and single properties round the site boundary, with larger groupings at Uckinghall and Ripple within 500m.</p> <p>Cumulative landscape impacts could arise if this site were to be developed in parallel with 'Ryall East' and/or 'Land opposite Ryall Quarry entrance', which would extend the visual impact.</p>   |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no SSSIs within or immediately adjoining the site. The only SSSI within 1.5km is Upton Ham, designated for its biological interest, 500m to the north-west, beyond the river Severn. The site falls within a SSSI impact risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are three within 1.5km the site boundary: the River Severn Open Water – flowing LWS is 430m to the west, Ripple Lake &amp; The Napps Broadleaved Woodland Open Water - standing Swamp LWS 1,080m to the south, and the Smithmoor Common &amp; Meadows Grassland Marshland LWS, which is 1,440m to the north. Given the distances and intervening development, it is considered unlikely that any LWS would experience significant negative impacts from extraction at this site, although particular attention should be paid to the potential for negative impacts to reach the river Severn. Cumulative impacts could arise if this site were to be developed in parallel with 'Ryall East' and/or 'Land opposite Ryall Quarry entrance', which would create a much larger area from which potential negative impacts could be felt on the river Severn. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal</p> | <p>The likely impacts on sensitive receptors, including the river Severn LWS, should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p> |

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|  |          | <p>Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, and none within 1.5km.</p>   |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>0</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site, but there are four within 1.5km. Uckinghall cross is 490m to the south, and Ripple village cross and the Cross north of St Mary's Church are both about 480m to the south. Towbury Hill camp is 1,130m to the south, the other side of the M5. Given that the closest SAMs are fairly well insulated from likely visual impacts, it is only the risk of noise, dust, etc. that could potentially compromise these assets settings, but significant negative impacts are considered unlikely to arise.</p> <p>There are no listed buildings within or adjoining the site, but there are 60 within 1.5km of the site boundary. All of these are listed at grade II, except for the grade I Church of St Mary, in Ripple, some 500m to the south. The closest listed building is Stratfordbridge House, around 290m to the east, but there are numerous listed buildings at this sort of distance to the east, south and west of the site. Desktop research suggest that there is unlikely to be a high degree of inter-visibility between the site and any listed building. There does remain the potential for negative impacts on the buildings' settings as a result of noise, dust, etc., but any impact is considered unlikely to be significant. Cumulative impacts could arise if this site were to be developed in parallel with 'Ryall East' and/or 'Land opposite Ryall Quarry entrance'.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise their setting by avoiding working certain areas, or by adopting appropriate screens and buffer zones.</p> |



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|   |           | <p>Uckinghall Conservation Area is within 200m to the south/south-west of the site. Ripple Conservation Area is about 300m to the south.</p> <p>This section of the Severn Vale is abundant with multi-period below-ground archaeology that includes a high potential for surviving, well-preserved organic deposits, artefacts and structures. This is at risk from de-watering and the impact of restoration methods where, for example, trees might be planted in areas with preserved features.</p>  |   |
| <p><b>4: Material assets</b><br/>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>The majority of the site (and the entirety of the south-west parcel) is grade 1 agricultural land. Smaller proportions to the north-west and, especially, to the east, are grade 2 (12% of the total area). The far south-east is grade 3 (c.5%). More detailed mapping, to show whether the Grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore likely that at least 95% of the site, and possibly more, could see some degree of negative impact in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p> | <p>The site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p>  | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved through Worcester or Tewkesbury, there may be the potential to impact on the AQMA in those areas. Cumulative emissions impacts could arise if this site were to be developed in parallel with 'Ryall East' and/or 'Land opposite Ryall Quarry entrance'.</p>   | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs in Worcester and Tewkesbury.</p> |



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| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would use existing off-site processing plant at Ryall House Farm. It may be possible to use water transport along the river Severn to move material to and from processing. Conveyors may offer a more climate-change friendly option for moving material to and from any river loading site than HGVs.</p> <p>Onward transport post-processing is likely to be by diesel lorry.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a rural location, some distance from any urban area. Its proximity to the river Severn (within some 430m at its closest) may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>0</p>   | <p>The site adjoins floodzone 2 and 3 on its south-eastern boundary. This floodzone is associated with the Ripple Brook. It appears that a very small fraction of the site (only some 0.04% of the site area) actually falls within these floodzones. There are also floodzones 2 and 3 to the west of the site, associated with the river Severn, both within about 420m at their closest. There are some small areas of 1 in 1000 surface water flooding in the north of the site and in the eastern 'third' of the site.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

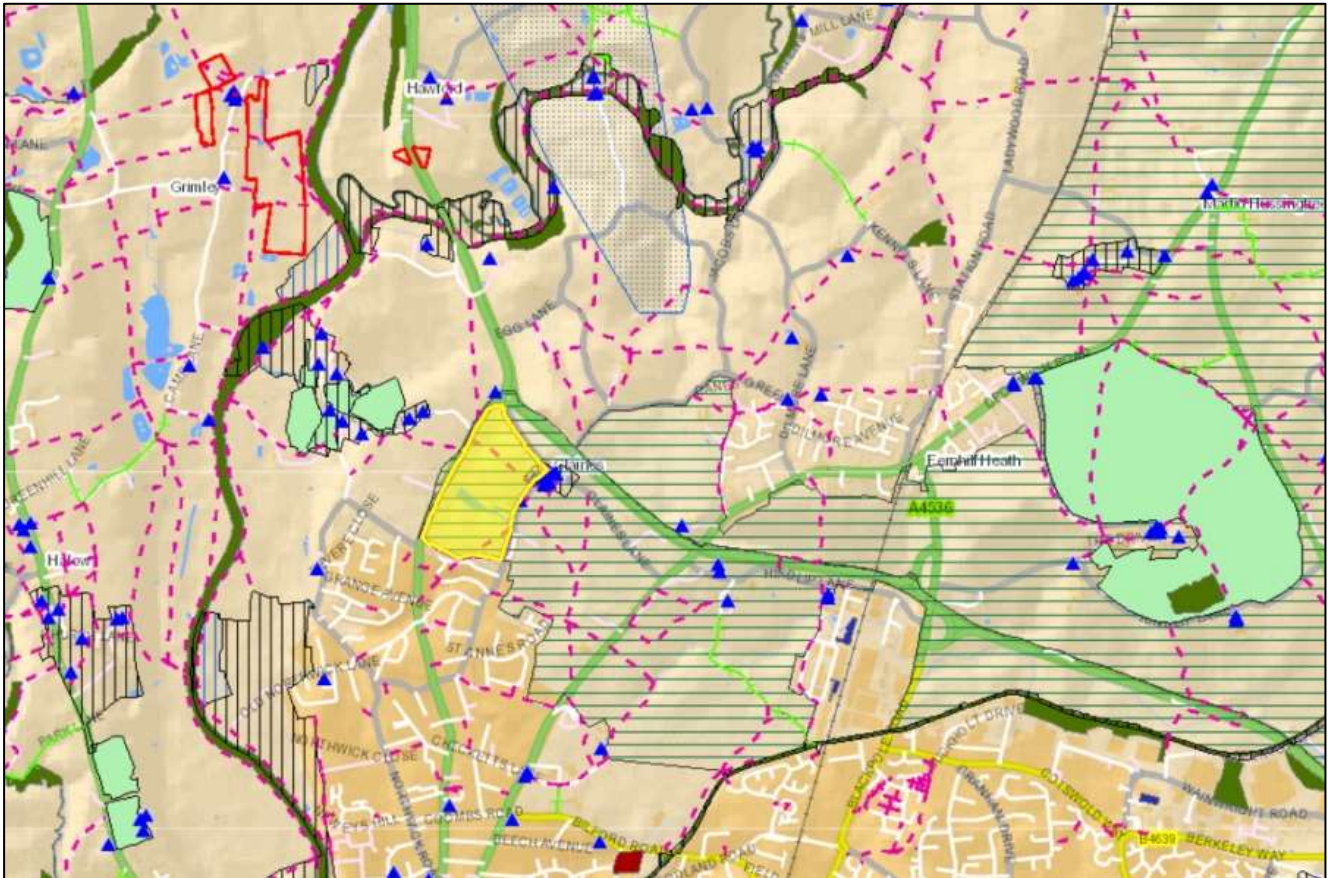
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| <p>flooding in all other areas.</p>   |           |  |  |
| <p><b>8: Access to Services</b><br/>                 Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p> | <p>--</p> | <p>Footpath 535 runs north to south through the eastern portion of the site. A small part of footpath 537 also enters the site for a short length in the south, and runs alongside the southern boundary. Footpath 536 runs alongside the site's south-eastern edge. Some degree of temporary or permanent closure or diversion is likely to be required, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>  | <p>The site is in a rural location. While there are no dwellings within the site boundary, there is a single property and a small group of properties off School Lane that are effectively surrounded by the site on three sides. There are various scattered groups of properties and single properties round the site boundary, with larger groupings at Uckinghall and Ripple within 500m. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts could arise if this site were to be developed in parallel with 'Ryall East' and/or 'Land opposite Ryall Quarry entrance'.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> <p>There are no electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>The site adjoins the Saxon's Lode landfill site to the west. This is a former quarry that is being filled with inert material.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>The proximity of water transport, with existing loading facilities on the river Severn within some 430m to the west (used for moving material between extraction and processing at minerals sites in that area) means that water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use. Junction 1 of the M50 is a likely conduit for onward transport.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ryall East' or 'Land opposite Ryall Quarry entrance', both of which would also be likely to see HGV movements along the same road network.</p> <p>There are bus stops along the A38 for services to Worcester, Tewkesbury, and Upton. The closest stops are 350m and 440m to the east. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means, including water-borne transport using the river Severn, should be maximised.</p>  |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the</p>   | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                         |

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| <p>infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>   |                                      | <p>economy and infrastructure, but no such development has been identified at this stage.</p>  |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 25: Church Farm, Claines

410,000t, 23Ha, access by road, processing on-site.



### Legend

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|  | <b>Church Farm, Claines</b>                    |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Scheduled Ancient Monuments</b>             |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Sites of Special Scientific Interest</b>    |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Source Protection Zones</b>                 |
|  | <b>Parks and Gardens of Local Importance</b>   |
|  | <b>Green Belt</b>                              |
|  | <b>Waste Sites</b>                             |



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Settled Farmlands on River Terrace' landscape type and the MW113d Land Cover Parcel. Guidance on this landscape type seeks to retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations, and it is likely that at least some of these (notably maintaining cropping/horticultural land uses) would be unable to be met during operations. The characteristics could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>The site is a long way from any Area of Outstanding Natural Beauty.</p> <p>There are no nationally-designated parks and gardens in close proximity to the site. The closest national site is Gheluvelt Park, but this is wholly separated from the site by significant urban development. Bevere undesignated park and garden of local importance is about 340m to the east, the other side of the A449, but ongoing housing development immediately alongside the A449 to its west means that any minor linkages between this site and the park and garden are likely to be severed.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using the river Severn, and those using rights of way.</p> <p>The site is in an edge-of-urban location. There are farms within the site boundary, and residential dwellings immediately adjoining the site on its</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |



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|   |           | <p>southern and south-eastern boundaries. New housing development immediately alongside the A449 to the west would experience visual impact. There are also scattered dwellings along Claines Lane, Cornmeadow Lane, and Bevere Lane. There are two schools to the north and east of the site, within 300m and 700m, respectively, but these are the other side of the A449.</p>   |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p>  | <p>There are no SSSIs within or immediately adjoining the site, but there are two within 1.5km, both of which are designated for their biological interest. Grimley Brick Pits is 950m to the north-west, and Northwick Marsh is 1,020m to the south-west. Connectivity to both of these sites is limited through roads and built development and, as such, significant negative impacts are considered unlikely. The site falls within a SSSI impact risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are four within 1.5km the site boundary: Droitwich Canal Reedbed Open Water standing Grassland LWS is 740m to the north; the River Salwarpe Open Water – flowing LWS is 810 to the north; the River Severn Open Water – flowing LWS is 850m to the west; and the Worcester and Birmingham Canal Open Water - flowing Marshland Reedbed LWS is 1,500m to the south-east. Due to the distances involved and intervening development, significant impacts on any of these LWS are not expected to arise as a result of minerals extraction at this site.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>Part of Hawford Wood Ancient Semi-Natural Woodland is 1,220m to the north of the site.</p> | <p>The likely impacts on sensitive receptors should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p> |
| <p><b>3: Cultural heritage, architecture and archaeology</b></p>  | <p>--</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site, but there are three within 1.5km. The 'Medieval fishponds and ridged cultivation remains, east of Grimley village' is 1,140m to the north-west, beyond the river Severn. Hawford Roman camp is about 1,200m to the</p>  | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related</p>   |

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| <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |           | <p>north, and the Dovecote at Hawford Grange is 1,490m north. Given the distances involved, no significant negative effects are considered likely to arise.</p> <p>There is a grade II listed building within the site (Church House, in the north-eastern corner) and a further 43 listed buildings within 1.5km of the site boundary, including Church Farm cottage, which is immediately adjacent to the site boundary on Cornmeadow Lane. All of the buildings are listed at grade II, except for four listed at grade II*: Church of St John the Baptist, within 20m to the east; Bevere House, 700m to the west; Rose Place, 930m to the east and the Dovecote about 20 yards west of Hawford Grange 1,460m to the north. Given the location of the two closest listed buildings, it is likely that they would experience some degree of negative impact. The scale and nature of this impact cannot be determined without knowing how the site would be worked and what screening would be in place, but it is likely that direct visual impact and/or impact on setting through dust, noise and vibration would be felt.</p> <p>The Claines Conservation Area extends into the site in the north-eastern corner, around Church Farm. Roughly 5,300 sq m of the Conservation area are within the site, amounting to about 21% of the Conservation Area's total size, and occupying around 2.3% of the site. There are a further five Conservation Areas within 1.5km of the site boundary: the Bevere Conservation Area is around 220m to the west at its closest, the other side of the A449; the Riverside Conservation Area is around 610m to the south-west, but is separated from the site by the extensive housing development in the north of the Worcester urban area; the Droitwich Canal Conservation Area is about 720m to the north; the Hallow Conservation Area is 1,430m to the south-west, the other side of the river Severn; and the Worcester and Birmingham Canal is 1,490m to the south-east.</p> | <p>to the site by the nature of their setting, including the Church House, Church Farm cottage, and the Claines Conservation Area. Consideration should be given to limiting any activities that could compromise the setting of these assets by adopting an appropriate buffer zone.</p> |
| <p><b>4: Material assets</b><br/>Ensure efficient use of land through</p>   | <p>--</p> | <p>The majority of the site (around 77%) is grade 2 agricultural land. The remainder of the site is grade 3. More detailed mapping, to show whether the Grade 3 land is grade 3a or grade 3b, is not available, and</p>   | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land if this is present. Where this would</p>   |



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| <p>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>would require site-specific assessment to determine. It is therefore likely that at least 77% of the site, and possibly more, could see some degree of negative impact in relation to this SA objective, at least in the short-medium term.</p> <p>The site is wholly within the Green Belt, and the site's southern and western boundaries almost correlate with the edge of the Green Belt in this location. Whilst mineral extraction is not an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p> <p>There are no village greens around the site.</p> | <p>not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>  |  | <p><b>Water quality</b><br/>There are no Source Protection Zones within the site. The nearest is an area of Source Protection Zone 3 about 780m to the north-west.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA, but there are two AQMAs in the centre of Worcester (Lowesmoor/Rainbow Hill 2.4km to the south, and Bridge Street/Dolday 3.5km to the south). If the material is moved through Worcester, there may be the potential to impact on the AQMAs in those areas.</p>  | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs in Worcester.</p>   |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and</p>  |  | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would process excavated material on site, thereby reducing transport emissions from moving to off-site processing plant.</p>  | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used</p>  |

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| <p>energy generated from renewable energy and low-carbon sources.</p>   |    | <p>Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site's location on the northern outskirts of Worcester means it is close to a major urban area. The site is within some 850m of the river Severn to the west, but there are no loading/unloading facilities in the immediate area, and the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport, is unclear.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p>   |
| <p><b>7: Flooding</b><br/>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>The site is not within or adjacent to any floodzones. The nearest floodzones are 550m to the west (associated with the river Severn) and 680m to the south-east (associated with the Barbourne Brook). There is an area of 1 in 1000 surface water flooding which runs roughly east to west through the centre of the site, as well as some more scattered areas within the site's north-western boundary. Within these areas are also some 1 in 30 and 1 in 100 surface water flooding.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>  |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-</p>  | -- | <p>There are two rights of way which pass through the site: footpath 508 runs roughly north-west to south-east across the northern-most third of the site, and footpath 509 runs roughly south-west to north-east in the south-east corner of the site. Footpath 513 runs just outside and alongside the site's south-eastern boundary and, on the other side of the site, extends away to the west beyond the A449. Footpath 514 runs just beyond the eastern boundary, the other side of Cornmeadow Lane. Footpath 512 extends to the north from beyond the northern site boundary the other side of the A449. Some degree of temporary or</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p> |

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| <p>economic status or educational attainment.</p>   |   | <p>permanent closure or diversion is likely to be required, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  |  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>                               |   | <p>The site is in an edge-of-urban location. There are farms within the site boundary, and residential dwellings immediately adjoining the site on its southern and south-eastern boundaries. There are also scattered dwellings along Claines Lane, Cornmeadow Lane, and Bevere Lane. There are two schools to the north and east of the site, within 300m and 700m, respectively, but these are the other side of the A449.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to two gas pipeline safety zones. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> <p>An electricity transmission lines runs roughly south-west to north-east through the northern quarter of the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within 1.5km of the site boundary. The Bilford Road household recycling centre is just beyond 1.5km to the south-east.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |
| <p><b>11: Traffic and transport</b><br/>                 Reduce the need to travel and move towards more</p>  |   | <p>There are no railheads in close proximity to the site.</p> <p>The site is around 850m from the river Severn (as the crow flies), but there are no loading/unloading facilities in this area and, as such, there may be limited potential for water-borne transport to offer a less polluting alternative to road-based HGVs. If road transport is used, the</p>   | <p>Transport movements by sustainable means, including water-borne transport using the river Severn, should be maximised.</p>  |










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| <p>sustainable travel patterns.</p>  |                                      | <p>A449 is an advisory road for HGV movements, and so is appropriate for this use. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>There are bus stops adjacent to the north-eastern, western, and south-western site boundaries, with services to Droitwich, Worcester, and Kidderminster. Although the site is on the boundary of Worcester, the nearest railway station, Foregate Street, is around 3.4km to the south.</p> |  |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p style="text-align: center;">+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |

# Site 26: Pinches 4

1,640,000t, 4Ha, access by road, processing on site.



## Legend

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|  | <b>Pinches 4</b>                               |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Source Protection Zones</b>                 |
|  | <b>Green Belt</b>                              |
|  | <b>Waste Sites</b>                             |





| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
|--|------------------------------|---|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | <p>-/?</p>                   | <p>This site falls wholly within the 'Principal Settled Farmlands' landscape type and the MW127g Land Cover Parcel. Guidance on the landscape type seeks to: conserve and enhance the pattern of hedgerows; retain the integrity of the dispersed pattern of settlement; conserve and enhance tree cover along watercourses; enhance patterns of tree cover associated with settlement; and seek opportunities to conserve all remaining areas of permanent pasture.</p> <p>It is unclear how the landscape characteristics could be maintained and enhanced during minerals operations – especially the conservation of permanent pasture. However, the characteristics could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>The site is not within or in close proximity to any Area of Outstanding Natural Beauty.</p> <p>There are no national parks and gardens or unregistered historic parks and gardens of local importance within or in close proximity to the site.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is quite well isolated from residential development, due to its location alongside junction 4 of the M5 on its eastern boundary, with a road and a highways depot to the north, and former mineral workings to the south. There are no properties within or immediately adjacent to the site. The closest properties are a house and farm within 120m and 160m to the south-west, respectively; and some scattered dwellings and farms from about 120m to the north, either side of Sandy Lane. Beyond this, more regular, although still relatively sparse, development is found around Top Road to the east, and Wildmoor Lane to the south-west.</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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| <p><b>2: Biodiversity and geodiversity</b><br/>                 Conserve and enhance Worcestershire's biodiversity and geodiversity.</p>  | <p>0</p> | <p>There are no SSSIs within or adjoining the site. The only SSSI within 1.5km is the Madeley Heath Pit, designated for its geological interest, 1,300m to the north-west. The site also falls within SSSI impact zones.</p> <p>There are no Local Wildlife Sites (LWS) within the site, but there are three within 1.5km of the site boundary, all of which are the other side of the M5 motorway: Beacon Wood &amp; Chadwich Wood is a Broadleaved Woodland LWS about 680m to the east; Broadmoor Wood &amp; Chadwich Manor Ponds is a Broadleaved Woodland LWS 690m to the north-east; and The Roughlands LWS is 1,150m to the east. Given the distances involved and the degree of intervening development, it is considered unlikely that significant negative effects would be experienced as a result of extraction at this site.</p> <p>The Madeley Heath Local Geological site is about 1,410m to the north. Given the distance involved, and the significant built and natural development between the two, it is considered unlikely that negative effects would arise on the LGS as a result of extraction here.</p> <p>Part of Beacon Wood Area of Ancient Semi Natural Woodland (ASNW) is 920m to the east, the other side of the M5. Broadmoor Wood ASNW is 1,090m to the north-east.</p> | <p>The likely impacts on sensitive receptors should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p>  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local</p> | <p>0</p> | <p>There are no scheduled ancient monuments (SAMs) within the site or within 1.5km of the site boundary.</p> <p>There are no listed buildings within the site or adjacent to the site boundary. There are five listed buildings within 1.5km, all of which are the other side of the M5 motorway. Four are listed at grade II, and one is grade II* (Chadwich Manor, about 680m to the north-east). The closest listed buildings are 'Lydiat House' and 'Gate piers east of No 61', which are 180m and 190m to the east, respectively.</p> <p>Given the distances and intervening development, it is considered unlikely that significant negative effects would arise as a result of</p>  | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise the setting of these assets by adopting an appropriate buffer zone.</p> |

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| <p>character and distinctiveness.</p>   |           | <p>extraction at this site. It could be argued that the cumulative effect of motorway development and traffic, with its attendant noise and pollution, would act in combination to lead to significant impacts. In reality, however, it is considered more likely that the setting of the assets would already be compromised by the motorway, and the additional disturbance from extraction would be subsumed within this.</p> <p>There are no Conservation Areas in close proximity to the site.</p>  |   |
| <p><b>4: Material assets</b><br/>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>The entire site falls within grade 3 agricultural land. More detailed mapping, to show whether the Grade 3 land is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine. It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land.</p> <p>The site is wholly within the Green Belt. Whilst mineral extraction is not an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p> <p>There are no village greens within or in close proximity of the site.</p> | <p>Where possible, soil sampling should guide development to avoid BMV agricultural land if this is present. Where this would not be appropriate for environmental and/or economic reasons, the site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p>  | <p><b>Water quality</b><br/>All of the site falls within Source Protection Zone 3, and a small part of the west of the site (around 16% of the site area) also falls within SPZ2.</p> <p><b>Air quality</b><br/>The site is not within or immediately close to any AQMA. But there are AQMAs in Bromsgrove, the whole of Birmingham, and, notably, Junction 1 of the M42. If material is moved by diesel HGV and passes these areas, air quality could be negatively impacted.</p>   | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs at Bromsgrove, Birmingham, and M42 J1.</p>   |



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| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would process excavated material on site, thereby reducing transport emissions from moving to off-site processing plant. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>Movement to processing plants will depend on whether this is on-site or elsewhere. Onward transport is likely to be by diesel lorry. There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is roughly equidistant, at some 3km, from the urban area of Bromsgrove to the south and the Birmingham conurbation to the north. The site's position close to the motorway network gives many options for final onward movement, which may or may not be local.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>0</p>   | <p>No part of the site falls within a floodzone. The nearest floodzone is about 610m to the west. Maps suggest there are no areas of surface water flooding within the site, although there are areas of 1 in 100 and 1 in 1000 surface water flooding running along and just beyond the site's western boundary.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

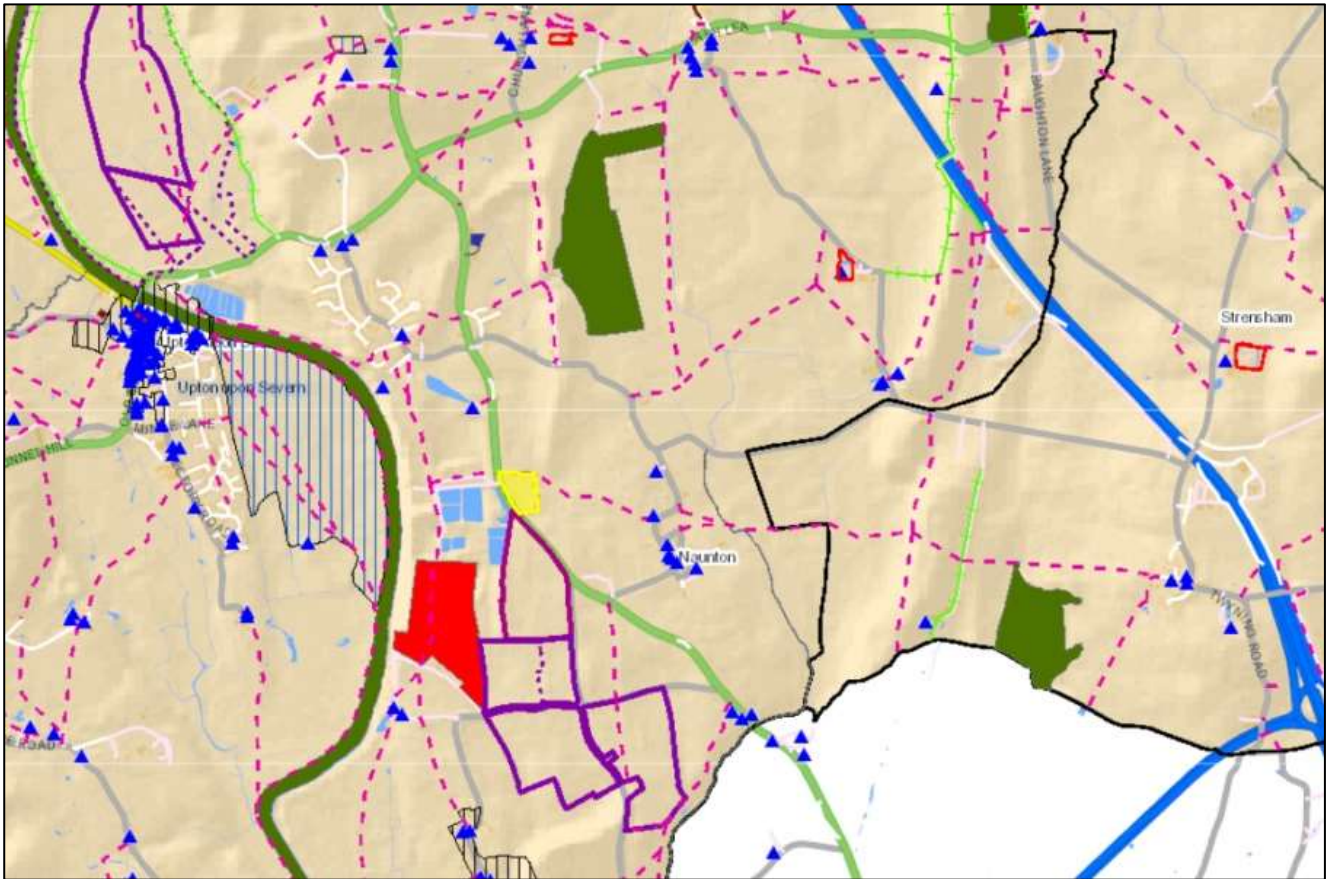
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| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p> | 0/? | <p>No public rights of way pass through the site itself, or alongside its boundary. Footpath 631 is the closest, being within 50m to the north of the site, although it is separated from the site by Sandy Lane and its established hedgerows. Footpath 532 to the south, although further away (approximately 120m to the south-west, at its closest) may be a more sensitive receptor. It may be that minerals extraction could interfere with enjoyment of these rights of way through visual intrusion, noise and/or air pollution, but this cannot be modelled at this stage, and the potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health and amenity</b><br/>Improve the health and well-being of the population and reduce inequalities in health.</p>   | 0/? | <p>The site is quite well isolated from residential development, due to its location alongside junction 4 of the M5 on its eastern boundary, with a road and a highways depot to the north, and former mineral workings to the south. There are no properties within or immediately adjacent to the site. The closest properties are a house and farm within 120m and 160m to the south-west, respectively; and some scattered dwellings and farms from about 120m to the north, either side of Sandy Lane. Beyond this, more regular, although still relatively sparse, development is found around Top Road to the east, and Wildmoor Lane to the south-west.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> <p>There are no electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3)</p>   | 0   | <p>Due to the site's location in an area of historic quarrying, there are several landfill sites in close proximity, as well as other waste management uses. A landfill and waste transfer station is immediately adjacent to the south.</p> <p>Sandy Lane landfill site is 1,070m to the west, the other side of Sandy</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |

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| recycling and composting, 4) recovery, 5) disposal.  |   | <p>Lane.<br/>Chadwich Lane Quarry landfill and Chadwich Lane Quarry Extension landfill are both to the north west, around 1,330m and 1,350m away, respectively.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  |   |
| <p><b>I1: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>   | - | <p>There are no railheads or freight-navigable watercourses in close proximity to the site. The site's location adjacent to junction 4 of the M5 means that this will most likely be the conduit for minerals.<br/>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise.</p> <p>The nearest bus stop is at the junction of Wildmoor Lane and Top Road, some 450m west of the site, with services to Halesowen. Services to and from Bromsgrove run from Cobnall road, some 1,280m to the south. There are no railway stations in close proximity.</p> | Transport movements by sustainable means should be maximised.   |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p> | + | The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.  | The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy. |
| <p><b>I3: Provision of housing</b><br/>Provide decent affordable housing for all, of the right quality and tenure</p>  | + | The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.   | The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.                          |

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| and for local needs, in clean, safe and pleasant local environments. |  |  |  |
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# Site 27: Land opposite Ryall Quarry entrance entrance

Unknown tonnage, access by road, processing off site at Ryall House Farm.



### Legend

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|  | Land opposite Ryall Quarry entrance     |
|  | Other sites submitted for consideration |
|  | Scheduled Ancient Monuments             |
|  | Listed Buildings                        |
|  | Public Footpath                         |
|  | Bridleway                               |
|  | Sites of Special Scientific Interest    |
|  | Conservation Areas                      |
|  | Local Wildlife Sites                    |
|  | Waste Sites                             |



| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects  | Potential mitigation  |
|--|------------------------------|--|---|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Settled Farmlands on River Terrace' landscape type and the MW69c Land Cover Parcel. Guidance on this landscape type seeks to retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows.</p> <p>Whilst some of these characteristics could potentially be maintained and enhanced during minerals operations - especially if phased - it is clear that some (maintaining cropping/horticultural land uses) will not be possible. The characteristics could, however, help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in close proximity ('Ryall East' and, to a lesser extent, either 'Land north east of Uckinghall Lane' or 'Land at School Lane'). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity (especially as the area is already partly in active/restored minerals use).</p> <p>The site lies between the Malvern Hills AONB (around 6.9km to the west) and the Cotswolds AONB (5.5km to the east).</p> <p>There are no nationally-designated parks and gardens, or undesignated parks and gardens of local importance in close proximity to the site. The closest national site is Croome Court Grade I listed park and garden, about 4.1km to the north.</p> <p>Depending on how the site is developed, potential screening, and local</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained.</p> |

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|   |          | <p>topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using the river Severn, and those using rights of way.</p> <p>The site is in a rural location. There are no dwellings within or adjoining the site boundary. The closest dwelling is a solitary house some 200m to the north on the A38. Current and former minerals operations mean there are few sensitive visual receptors to the west/south-west of the site.</p> <p>There is a small group of homes about 400m to the south-east, and a larger group of dwellings in the settlement of Naunton, some 550m east of the site, and the eastern parts of Upton-upon-Severn, some 610m to the north. There are also various farms and dwellings along the unnamed road between Naunton and Upton.</p>  |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0</p> | <p>There are no SSSIs within or immediately adjoining the site. The only SSSI within 1.5km is Upton Ham, designated for its biological interest, 550m to the west, beyond the river Severn. The site falls within a SSSI impact risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are two within 1.5km the site boundary: the River Severn Open Water – flowing LWS is 480m to the west, and the Smithmoor Common &amp; Meadows Grassland Marshland LWS is 720m to the north. Given the distances involved, it is considered unlikely that significant negative effects would arise on these sites as a result of minerals extraction here. There is the potential, however, for in-combination effects to occur as a result of development here and at nearby sites (Land at Ryall East, Land north east of Uckinghall Lane, and/or Land at School Lane) that are greater than each site's individual contribution. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result</p> | <p>The likely impacts on sensitive receptors should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p> |

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|  |  | <p>of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, and none within 1.5km.</p>   |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>         Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |  | <p>There are no Scheduled Ancient Monuments (SAM) within the site, and none within 1.5km.</p> <p>There are no listed buildings within or adjoining the site, but there are 24 within 1.5km of the site boundary. All of these are listed at grade II. The closest listed building is 'The Cottage', some 300m to the north. There is the potential for some degree of negative impact to arise on nearby listed buildings as a result of minerals extraction here, both from direct inter-visibility, and also from damage to their setting from noise, dust, vibrations, etc. The scale of any negative impacts is unclear at this stage.</p> <p>Cumulative impacts could also arise if nearby sites ('Ryall East' and/or either 'Land at School Lane' or 'Land north east of Uckinghall Lane') were to be developed at the same time.</p> <p>The presence of former minerals activity in the area, including bunds, etc., may mean that the setting already has already been affected by a degree of visual alteration.</p> <p>Desktop research suggest that those listed buildings in Naunton may experience less direct inter-visibility as a result of the local landform, but this will depend on the height of any minerals plant and buildings.</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise the setting of these assets by adopting an appropriate buffer zone.</p> |



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|   |   | <p>Uckinghall Conservation Area is about 1,420m south of the site. The Upton-upon-Severn Conservation Area is 1.5km away to the north-west.</p> <p>This section of the Severn Vale is abundant with multi-period below-ground archaeology that includes a high potential for surviving, well-preserved organic deposits, artefacts and structures. This is at risk from de-watering and the impact of restoration methods where trees might be planted in areas with preserved features.</p> |   |
| <p><b>4: Material assets</b><br/>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 north-west of the site (around 62%) falls within grade 2 agricultural land, whilst the remainder of the site, in the south-east, is grade 1. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>   | <p>The site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | - | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved through Worcester or Tewkesbury, there may be the potential to impact on the AQMA in those areas. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed</p>  | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs in Worcester and Tewkesbury.</p> |

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|  |            | <p>in parallel with 'Ryall East' and/or either 'Land at School Lane' or 'Land north east of Uckinghall Lane', which would also be likely to use HGVs and to pass along the same road network.</p>   |  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would process excavated material off-site at Ryall House Farm. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a rural location, some distance from any urban area. Its proximity to the river Severn (within some 490m at its closest) may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>0</p>   | <p>The site is not within any floodzone, and is some 470m from the nearest, which is associated with the river Severn to the west. There is a small area of 1 in 1000 surface water flooding in the north-east of the site, within which there are also areas of 1 in 30 and 1 in 100 surface water flooding. A further very small area of 1 in 1000 surface water flooding is in the north-west of the site, just to the east of the A38.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

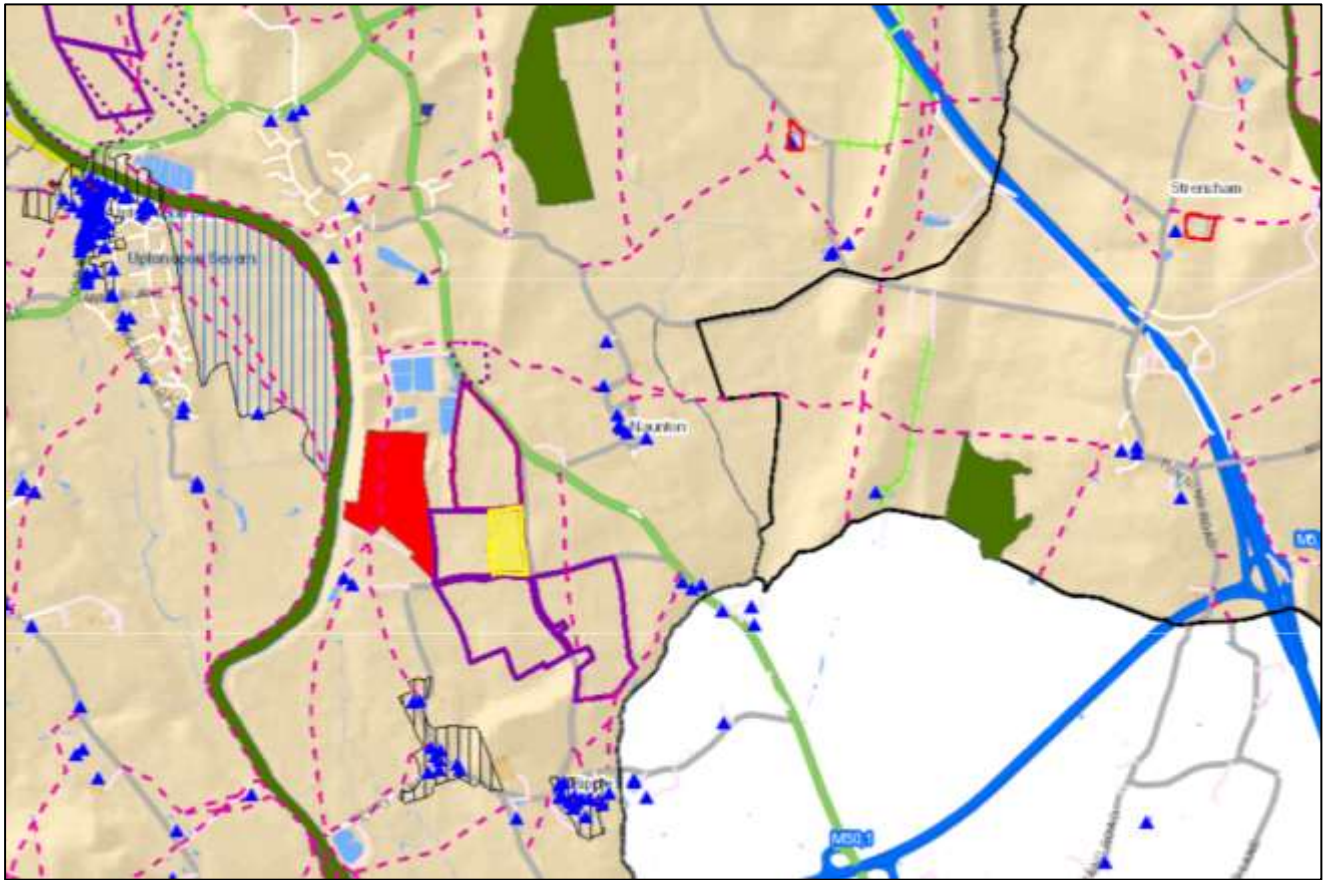
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| areas.  |     |   |  |
| <p><b>8: Access to Services</b><br/>         Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or educational attainment.</p> | 0/? | <p>There are no rights of way running through the site, but footpath 517 runs immediately alongside the site's northern boundary. Some degree of temporary or permanent closure or diversion may be required, although this will depend on the circumstances and cannot be modelled at this stage. The site could negatively affect footpath users through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>  |
| <p><b>9: Health</b><br/>         Improve the health and well-being of the population and reduce inequalities in health.</p>   | 0/? | <p>The site is in a rural location. There are no dwellings within or adjoining the site boundary. The closest dwelling is a solitary house some 200m to the north on the A38. Current and former minerals operations mean there are few sensitive visual receptors to the west/south-west of the site.</p> <p>There is a small group of homes about 400m to the south-east, and a larger group of dwellings in the settlement of Naunton, some 550m east of the site, and the eastern parts of Upton-upon-Severn, some 610m to the north. There are also various farms and dwellings along the unnamed road between Naunton and Upton. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Ryall East' and/or either 'Land at School Lane' or 'Land north east of Uckinghall Lane'.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site or in close proximity to it.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

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| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>Saxon's Lode landfill site is south-west of the site, some 310m away. This is a former quarry that is being filled with inert material.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>The proximity of water transport, with existing loading facilities on the river Severn within some 490m to the west (used for moving material between extraction and processing at minerals sites in that area) means that water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use.</p> <p>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Ryall East' and/or either 'Land at School Lane' or 'Land north east of Uckinghall Lane', all of which would also be likely to see HGV movements along the same road network.</p> <p>The closest bust stop is about 650m south of the site on the A38, with services to Worcester, Upton and Tewkesbury. There are also bus stops from 670m to the north in Ryall, with services to Upton, Worcester, Malvern and Tewksbury. There is no railways station in close proximity.</p> | <p>Transport movements by sustainable means, including water-borne transport using the river Severn, should be maximised.</p>  |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the</p>   | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p>                         |











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| <p>infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>   |                                      | <p>economy and infrastructure, but no such development has been identified at this stage.</p>  |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |

# Site 28: Land at School Lane

Unknown tonnage, 5Ha, access by road or conveyor,  
processing off site at Ryall House Farm.



### Legend

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|  | <b>Land at School Lane</b>                     |
|  | <b>Other sites submitted for consideration</b> |
|  | <b>Scheduled Ancient Monuments</b>             |
|  | <b>Listed Buildings</b>                        |
|  | <b>Public Footpath</b>                         |
|  | <b>Bridleway</b>                               |
|  | <b>Sites of Special Scientific Interest</b>    |
|  | <b>Conservation Areas</b>                      |
|  | <b>Local Wildlife Sites</b>                    |
|  | <b>Waste Sites</b>                             |



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Ordnance Survey 100024230

| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation   |
|--|------------------------------|---|--|
| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>The entire site falls within the 'Settled Farmlands on River Terrace' landscape type and is within the MW69c Land Cover Parcel. Guidance on this landscape type seeks to retain the integrity of the dispersed settlement pattern; conserve and enhance tree cover along watercourses; maintain cropping/horticultural land uses; enhance patterns of tree cover associated with settlement; and conserve and enhance patterns of hedgerows.</p> <p>Whilst some of these characteristics could potentially be maintained and enhanced during minerals operations - especially if phased - it is clear that some (maintaining cropping/horticultural land uses) will not be possible. The characteristics could, however, help to inform the restoration of the site as part of any green infrastructure proposals. There is the potential for cumulative landscape impacts to arise as a result of development of this site and others in close proximity (Ryall East, Land north east of Uckinghall Lane, and Land opposite Ryall Quarry entrance). While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity (especially as the area is already partly in active/restored minerals use).</p> <p>The site lies between the Malvern Hills AONB (around 7.2km to the west) and the Cotswolds AONB (5.3km to the east).</p> <p>There are no nationally-designated parks and gardens, or undesignated parks and gardens of local importance in close proximity to the site. The closest national site is Croome Court Grade I listed park and garden, about 4.1km to the north.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, those using the river Severn, and those</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained. Consideration should be given to how the impacts arising from this site might combine with other nearby sites.</p> |

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|  |            | <p>using rights of way.<br/>                 The site is in a rural location. There are no dwellings within or adjoining the site boundary. The closest property is a veterinary clinic 220m to the east. There are also ten dwellings the other side of the A38, some 250m to the north-east. Current and former minerals operations mean there are few sensitive visual receptors to the west/south-west of the site.</p>  |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>                 Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | <p>0/-</p> | <p>There are no SSSIs within or immediately adjoining the site. The only SSSI within 1.5km is Upton Ham, designated for its biological interest, 800m to the north-west, beyond the river Severn. The site falls within a SSSI impact risk zone.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are two within 1.5km the site boundary: the River Severn Open Water – flowing LWS is 720m to the west, and the Smithmoor Common &amp; Meadows Grassland Marshland LWS is 1,430m to the north. Given the distances involved, it is considered unlikely that significant negative effects would arise on these sites as a result of minerals extraction here. There is the potential, however, for in-combination effects to occur as a result of development here and at nearby sites (Land at Ryall East, Land north east of Uckinghall Lane, and Land opposite Ryall Quarry entrance) that are greater than each site's individual contribution. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> | <p>The likely impacts on sensitive receptors should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p> |



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|  |            | <p>There are no Local Geological Sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland within the site, and none within 1.5km.</p>  |  |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>0/-</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site, but there are three within 1.5km, all to the south of the site: Uckinghall cross is 930m away; Ripple village cross is 1,110m away; and the Cross north of St Mary's Church is 1,140m away.</p> <p>There are no listed buildings within or adjoining the site, but there are 53 within 1.5km of the site boundary. All of these are listed at grade II, except the grade I listed Church of St Mary, in Ripple, about 1,160m to the south. The closest listed buildings are those at Naunton, some 610m to the north-east. There is the potential for any impact on those listed buildings at Naunton to be exacerbated by the cumulative impacts of development here and at nearby sites, in particular 'Ryall East' and 'Land opposite Ryall Quarry entrance'.</p> <p>There is the potential for some degree of negative impact to arise on listed buildings as a result of minerals extraction here, both from direct inter-visibility, and also from damage to their setting from noise, dust, vibrations, etc. The scale of any negative impacts is unclear at this stage, and the buildings are some distance away. The presence of former minerals activity in the area, including bunds, etc., may mean that the setting of nearby listed buildings has already been affected by a degree of visual alteration.</p> <p>Uckinghall Conservation Area is about 580m south of the site. The Ripple Conservation Area is 1,030m to the south.</p> <p>This section of the Severn Vale is abundant with multi-period below-ground archaeology that includes a high potential for surviving, well-preserved organic deposits, artefacts and structures. This is at risk from</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting. Consideration should be given to limiting any activities that could compromise the setting of these assets by adopting an appropriate buffer zone.</p> |

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|   |    | de-watering and the impact of restoration methods where trees might be planted in areas with preserved features.  |   |
| <p><b>4: Material assets</b><br/>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 entire site falls within grade I agricultural land. As such, it is likely that some degree of negative impact will arise in relation to this SA objective, at least in the short-medium term.</p> <p>No part of the site is within the Green Belt.</p> <p>There are no village greens around the site.</p>   | <p>The site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | -  | <p><b>Water quality</b><br/>There are no Source Protection Zones within or in close proximity to the site.</p> <p><b>Air quality</b><br/>The site is not within or close to an AQMA. If the material is moved through Worcester or Tewkesbury, there may be the potential to impact on the AQMA in those areas. These impacts could be worsened through cumulative emissions if this site were to be developed in parallel with nearby sites ('Ryall East', 'Land north east of Uckinghall Lane', and/or 'Land opposite Ryall quarry entrance') which would be likely to also use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AMQAs in Worcester and Tewkesbury.</p> |

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| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would process excavated material off-site at Ryall House Farm. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a rural location, some distance from any urban area. Its proximity to the river Severn (within some 730m at its closest) may offer the potential for water-borne transport, which could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>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>0</p>   | <p>The site is not within any floodzone, and is roughly equidistant between the floodzones of the river Severn (some 670m to the west) and the Ripple brook (some 670m to the east/south-east). There is a small area of 1 in 1000 surface water flooding in the north-west of the site, with a smaller area of 1 in 100 flooding within it, as well as a very small area of 1 in 1000 in the south-east corner.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

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| <p><b>8: Access to Services</b><br/>                 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>There are no rights of way running through the site or adjacent to the site boundary. The closest right of way is footpath 534, some 180m to the east. This is separated from the site by a road with hedges, which could minimise any adverse impacts. Nevertheless, the site could negatively affect users of this footpath or others within the vicinity, through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>Mitigation may not be required, given that the nearest rights of way are some distance from the site, but effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p> |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | - | <p>The site is in a rural location. There are no dwellings within or adjoining the site boundary. The closest property is a veterinary clinic 220m to the east. There are also ten dwellings the other side of the A38, some 250m to the north-east. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Current and former minerals operations mean there are few sensitive visual receptors to the west/south-west of the site. Cumulative impacts could arise, particularly in relation to dwellings to the north-east, if this site were to be developed in parallel with 'Ryall East' and/or 'Land opposite Ryall Quarry entrance'.</p> <p>Desktop research and/or consultation responses indicate that the site is within or close to a gas pipeline safety zone. Although the presence of this infrastructure does not in itself mean that health and safety would be at risk by extraction at this site, it nevertheless means that extra care is needed in planning and operations to ensure safety is maintained.</p> <p>There are no electricity transmission lines running through the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p>  |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the</p>  | 0 | <p>Saxon's Lode landfill site is 250m to the west. This is a quarry that is being filled with inert material.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation</p>  |

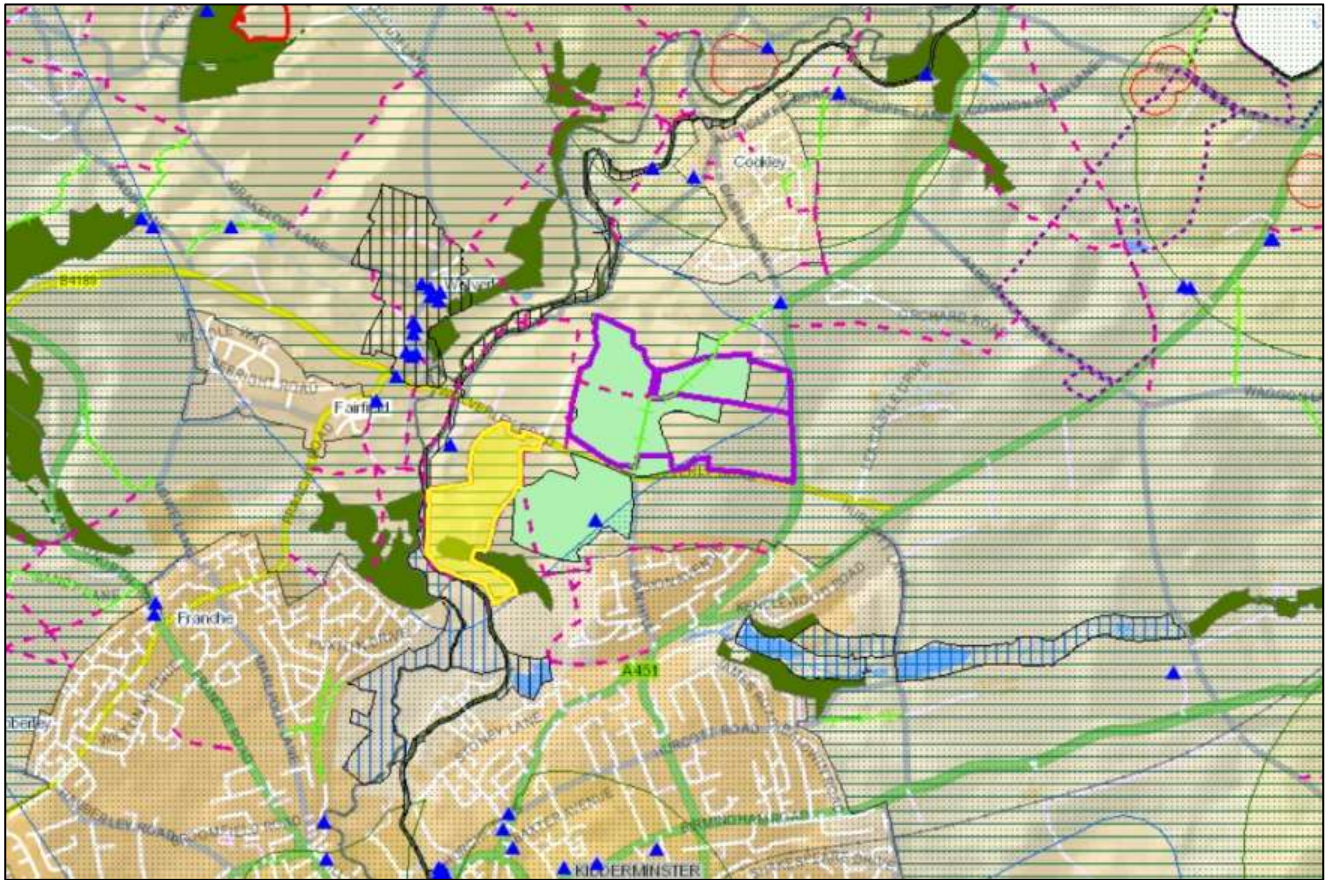
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| <p>waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p>                                |   | <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>in relation to this SA objective has not been identified.</p>   |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>           | - | <p>There are no railheads in close proximity to the site.<br/>The proximity of water transport, with existing loading facilities on the river Severn within some 730m to the west (used for moving material between extraction and processing at minerals sites in that area) means that water-borne transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.<br/>If road transport is used, the A38 is an advisory road for HGV movements, and so is appropriate for this use.<br/>Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with the nearby sites 'Ryall East', and/or 'Land opposite Ryall quarry entrance', which would also be likely to see HGV movements along the same road network. If that part of 'Land north east of Uckinghall Lane' that does not include this site were to be progressed, this too could contribute to cumulative impacts.<br/><br/>The closest bus stops are 520m and 750m to the east on the A38, with services to Worcester, Upton, and Tewkesbury. There is no railway station in close proximity.</p> | <p>Transport movements by sustainable means, including water-borne transport using the river Severn, should be maximised.</p>                                  |
| <p><b>12: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst</p> | + | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |

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| <p>ensuring all share the benefits, urban and rural.</p>   |                                      |  |   |
| <p><b>I3: Provision of housing</b><br/>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 style="text-align: center;">+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p> |











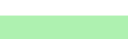



# Site 29: Land south of Wolverley Road

Unknown tonnage, 20Ha, access unknown, processing unknown.



### Legend

|   |   |
|---|---|
|  | Land south of <u>Wolverley Road</u>     |
|  | Other sites submitted for consideration |
|  | Scheduled Ancient Monuments             |
|  | Listed Buildings                        |
|  | Public Footpath                         |
|  | Bridleway                               |
|  | Sites of Special Scientific Interest    |
|  | Conservation Areas                      |
|  | Local Wildlife Sites                    |
|  | Source Protection Zones                 |
|  | Parks and Gardens of Local Importance   |
|  | Green Belt                              |

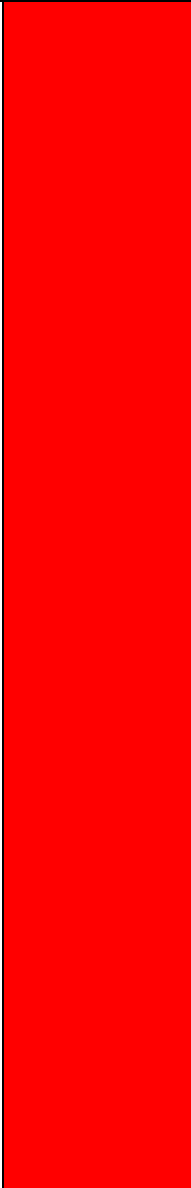


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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | -                            | <p>Most of the site falls within the 'Sandstone Estatelands' landscape type, with a small part of the site in the south falling with the 'Riverside Meadows' landscape type. Guidance on the 'Sandstone Estatelands' landscape type seeks to: conserve and restore the distinctive hedgerow pattern with priority given to primary hedgerows; identify opportunities for further large scale planting of woodlands and tree belts to strengthen the regular patterns of the landscape; conserve and restore parklands; conserve and enhance tree cover along watercourses; conserve the integrity of estate villages; promote the creation and appropriate management of natural vegetation communities along highways and other non-farmed areas; and promote the development of wide field margins for wildlife benefit.</p> <p>Guidance on the 'Riverside Meadows' landscape type seeks to: retain the unity of the linear form of these landscapes; conserve all existing areas of permanent pasture; seek opportunities to encourage the conversion of arable land back to</p> <p>Arable; conserve and enhance continuous tree cover along hedgelines, ditches and watercourses; conserve existing wetland habitats and seek opportunities for further wetland habitat creation; and avoid building or road construction works; avoid further drainage of waterside meadows; explore opportunities to return to patterns and processes of natural flooding cycles where feasible.</p> <p>In terms of Land Cover Parcels (LCPs), the site is divided along the same lines, with most of the site falling with in LCP KS22. 1a, and a small part to the south falling within KS24b.</p> <p>It is unlikely that all of the landscape characteristics could be maintained and enhanced during operational phases (especially conserving and restoring parklands, and further large-scale planting), although at least some of these could be respected operations. The characteristics could</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained. Consideration should be given to how the impacts arising from this site might combine with the Strong Farms site to the north and east.</p> |



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|   |           | <p>help to inform the restoration of the site as part of any green infrastructure proposals. There is the potential for cumulative landscape impacts to arise as a result of development of this site alongside the nearby 'Land north of Wolverley Road' or 'Strong Farms', as well as, - to a lesser extent - 'Wolverley Glebe'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is not within or adjacent to any nationally-designated park or garden, but part of Sionhill House undesignated park and garden of local importance is to the east, actually abutting part of the site's eastern boundary.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road and canal traffic, and those using rights of way.</p> <p>The site is in a semi-rural location. Although it is largely surrounded by trees and green spaces, it is only just beyond the northern extent of the built-up area of Kidderminster, and only some 400m from the settlement of Fairfield to the west, and 500m from Wolverley to the north. There are no properties within the site, but there are a handful of scattered houses adjoining the site boundary in the north and north-west. Beyond these, the nearest properties are off the Wolverley Road. There is also Heathfield School some 120m to the east, and a sports ground and camp site immediately over the Wolverley Road to the north.</p> <p>Cumulative visual impact on some receptors could arise as a result of development here and at the nearby Strong Farms/Land north of Wolverley Road site(s).</p> |  |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance<br/>Worcestershire's biodiversity and</p> | <p>--</p> | <p>There are no SSSIs within the site, but the Stourvale Marsh SSSI begins immediately beyond the Staffordshire and Worcestershire canal to the west, within some 10m from the site at its closest. Puxton Marshes SSSI is just to the west of Stourvale Marsh, divided by the river Stour. Puxton Marshes is 150m from the site at its closest. There are two other SSSIs within 1.5km: Hurcott &amp; Podmore Pools is 1,050m to the east, and</p>  | <p>The likely impacts on sensitive receptors – especially Stourvale Marsh SSSI and Wolverley Court Lock Carr LWS - should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, and</p> |

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| <p>geodiversity.</p> |  | <p>Hurcott Pasture is 1,300m to the east. All of these SSSIs are designated because of their biological interest. The site falls within SSSI impact risk zones. The proximity of these sites suggest that some degree of negative impact could be experienced, although the scale of this impact is unclear.</p> <p>The Wolverley Court Lock Carr Broadleaved Woodland Wet Woodland Marshland Swamp Local Wildlife Site (LWS) extends some 175m into the southern part of the site. There are a further seven LWS within 1.5km: Staffordshire and Worcestershire Canal Open Water – flowing LWS abuts the site's western boundary; the River Stour Open Water – flowing LWS is just beyond this, within 20m to the west of the site; Puxton Marsh Marshland Swamp Broadleaved Woodland Grassland LWS is within 30m to the west of the site; Wolverley Marsh Marshland Mire Swamp LWS is some 400m to the north; Gloucester Coppice Grassland Broadleaved Woodland LWS is 560m to the north; Hurcott &amp; Podmore Pools (Pastures) Grassland Broadleaved Woodland Wet Woodland LWS is 980m to the east; and Honeytop Farm Pastures Grassland LWS is 1,360m to the west. The presence of the LWS within the site suggests that there is a risk of significant negative impact, especially if the site operations could potentially compromise the wet woodland marshland setting through dewatering.</p> <p>There may be some cumulative impacts as a result of development at the nearby 'Land north of Wolverley Road' or 'Strong Farms', with the most obvious receptor being the river Severn, given all of these sites' proximity to this LWS. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations.</p> | <p>installing protective barriers and screening. The potential level of impacts to designated sites is such that mitigation measures may not necessarily be capable of overcoming them. Mitigation and compensation could reduce the area available for extraction to such an extent that minerals operations become unviable.</p> |
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|  |          | <p>Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological Sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland (ASNW) within the site. Part of Gloucester Coppice ASNW is 570m to the north, and part of Solcum Coppice ASNW is 1,360m to the north.</p>   |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b><br/>                 Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> | <p>-</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site, and none within 1.5km.</p> <p>There are no listed buildings within or adjoining the site, but there are 58 within 1.5km of the site boundary. All of these are listed at grade II, except for one building listed at grade I (the Parish church of St Mary and All Saints, 1,240m to the south in Kidderminster), and four listed at grade II (the Church of St George 1,260m to the south in Kidderminster and, in Wolverley to the north: the Church of St John the Baptist 490m away; the 'Oak House, the Court House and the Old School House' 590m away; and Wolverley House, 660m away. The closest listed building is Wolverley Court, within 100m to the west. Given its proximity, and the fact that there is minimal existing screening, it is possible to foresee negative impacts arising on Wolverley Court, both through inter-visibility, and through impacts on its setting from dust, noise, vibration, etc. This impact could potentially be significant, but is unclear at this stage. Cumulative impacts could also arise if the nearby 'Land north of Wolverley Road' or 'Strong Farms' site were to be developed at the same time. Sion Hill House may be particularly sensitive to such cumulative impacts, as it is roughly equidistant from each site.</p> <p>The western boundary of the site adjoins the Staffordshire and Worcestershire Canal Conservation Area. Other Conservation Areas within 1.5km are at Church Street, Kidderminster, 1,290m to the south (albeit separated from the site by dense urban development); and</p> | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related to the site by the nature of their setting, including Wolverley Court. Consideration should be given to limiting any activities that could compromise the setting of these assets by adopting an appropriate buffer zone.</p> |

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|   |           | <p>Wolverley, which is 300m to the north-west.</p> <p>This site is located within a landscape that was historically common heathland. There is a heightened potential for prehistoric flint artefacts at this location in common with comparable former heathland landscapes.</p>  |  |
| <p><b>4: Material assets</b><br/>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>The entire site falls within grade 3 agricultural land. More detailed mapping, to show whether this is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine). It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land.</p> <p>The site is wholly within the Green Belt. Whilst mineral extraction is not an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p> <p>There are no village greens around the site.</p> | <p>The site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p> <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p> |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   | <p>-</p>  | <p><b>Water quality</b><br/>The site does not fall within any Source Protection Zones, but there is an SPZ3 within about 12m of the site's south-eastern corner.</p> <p><b>Air quality</b><br/>The site is not within an AQMA, but there are AQMAs at Kidderminster Ring Road to the south and at Hagley to the north-east and Dudley borough beyond this. If the material is moved through or close to these locations, there may be the potential to impact on the AQMAs. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Land north of Wolverley Road' or 'Strong Farms' and/or 'Wolverley Glebe', all of which would also be likely to use HGVs and to pass along the same road</p>                        | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs at Kidderminster, Hagley, and Dudley.</p>                           |

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|  |     | network.   |  |
| <p><b>6: Climate Change and energy</b><br/>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 nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would process excavated material off-site at the Land North of Wolverley Road site. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs, although these may not be feasible where they have to cross roads and pass through other private land.</p> <p>There will be climate change benefits to providing minerals close to the point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a semi-rural location, and is in close proximity to the urban area of Kidderminster. It is adjacent to the Staffordshire and Worcestershire canal on its western boundary, which may offer the potential for water-borne transport, but this would depend on the availability of loading and unloading facilities and other issues. If viable, water transport could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources used wherever possible.</p> |
| <p><b>7: Flooding</b><br/>Ensure inappropriate development does not occur in high-risk flood-prone areas and does not adversely contribute to fluvial flood risks</p>                                    | 0   | <p>The site is not within any floodzone, although the floodzone associated with the river Stour comes to within 13m of the site's western boundary. The site is separated from the floodzone by the Staffordshire and Worcestershire canal. There are small areas of 1 in 1000 surface water flooding in the middle part of the north of the site, and in the south, around the wooded area.</p>   | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>   |

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| <p>or contribute to surface water flooding in all other areas.</p>  |             |  |   |
| <p><b>8: Access to Services</b><br/>                 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>Footpath 638 runs north to south through the very north-east of the site, and then leaves the site but follows the site's north-eastern boundary for some 175m before moving away from the site to the east. This footpath way may be compromised by the development of this site, and may require temporary or permanent closure or diversion. Footpath 637 runs alongside the western side of the Staffordshire and Worcestershire canal, just beyond the west of the site. Although the footpath does pass through the site it does so for only a short distance, and it appears likely that a diverted route would not cause significant adverse effects. The site could negatively affect users of this footpath or others within the vicinity, through visual intrusion, noise, etc. The potential for impacts to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p>   |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>   | <p>-</p>    | <p>The site is in a semi-rural location. Although it is largely surrounded by trees and green spaces, it is only just beyond the northern extent of the built-up area of Kidderminster, and only some 400m from the settlement of Fairfield to the west, and 500m from Wolverley to the north. There are no properties within the site, but there are a handful of scattered houses adjoining the site boundary in the north and north-west. Beyond these, the nearest properties are off the Wolverley Road. There is also Heathfield School some 120m to the east, and a sports ground and camp site immediately over the Wolverley Road to the north. There is the potential for negative impacts, including noise and air pollution, to arise as a result of minerals extraction here. These impacts could be felt on these sensitive receptors. Current and former minerals operations mean there are few sensitive visual receptors to the west/south-west of the site. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Land north of Wolverley Road' or 'Strong Farms' and/or – to a lesser extent – 'Wolverley Glebe'.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts on the nearby school arising as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |

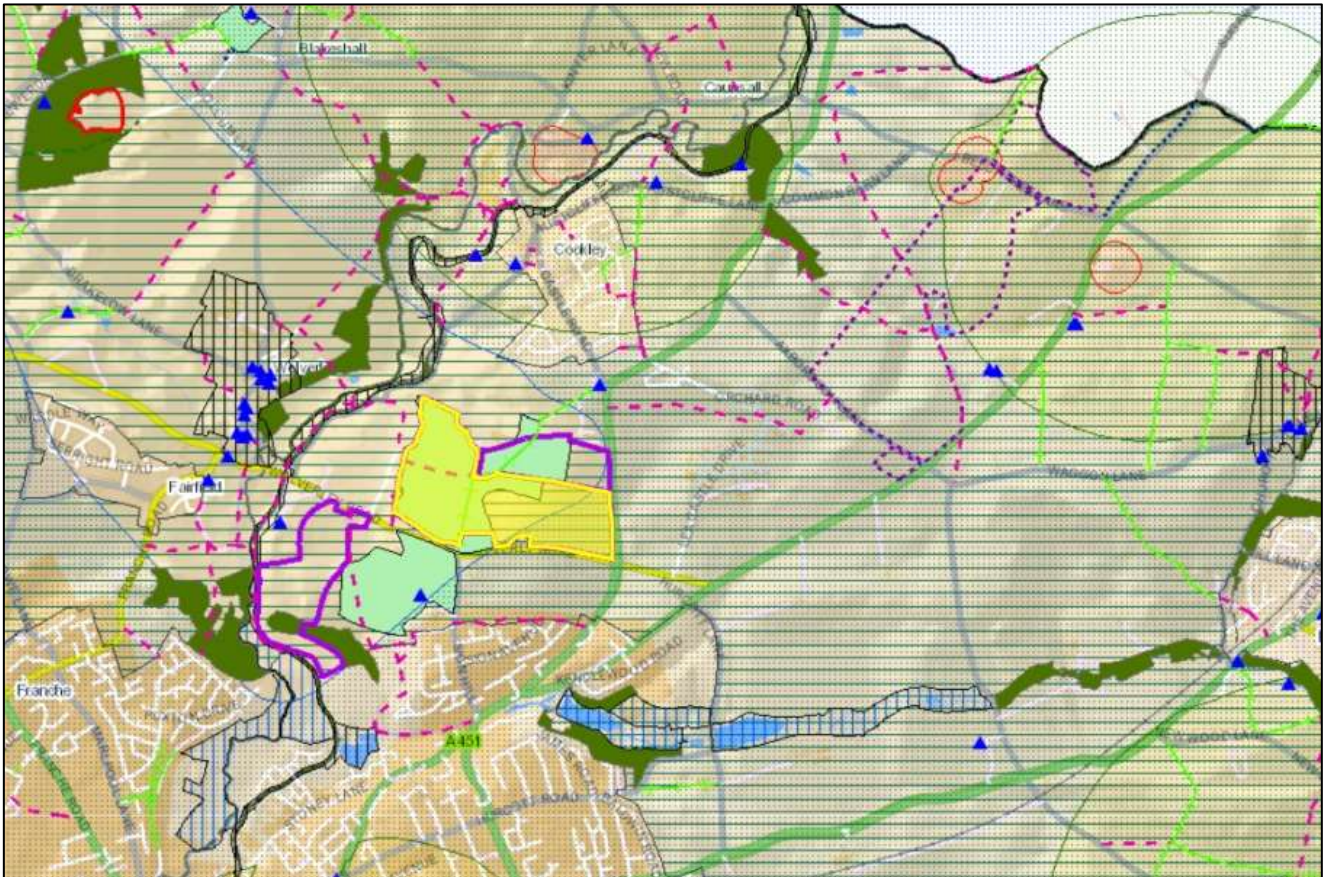
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|  |   | There are no major accident hazard pipelines or electricity transmission lines running through the site.  |  |
| <p><b>10: Waste</b><br/>Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site. The nearest waste site is a physical treatment site 1,620m to the south in Kidderminster.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>  | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p> |
| <p><b>11: Traffic and transport</b><br/>Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>It is adjacent to the Staffordshire and Worcestershire canal on its western boundary, which may offer the potential for water-borne transport, but this would depend on the availability of loading and unloading facilities and other issues. If viable, water transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A449 is an advisory HGV route, and so is appropriate for this use - although the roads to gain access to the A449 may be less suitable, depending on which route is taken. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Land north of Wolverley Road' or 'Strong Farms' and/or 'Wolverley Glebe', all of which would also be likely to see HGV movements along the same road network.</p> <p>There are bus stops on Wolverley Road, 250m to the west, and Sion Hill 730m to the east. These services variously serve Kinver, Kidderminster, Halesowen, and other settlements. There are no railway stations in close proximity.</p> | <p>Transport movements by sustainable means, including water-borne transport, should be maximised.</p>   |

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| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p> | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |

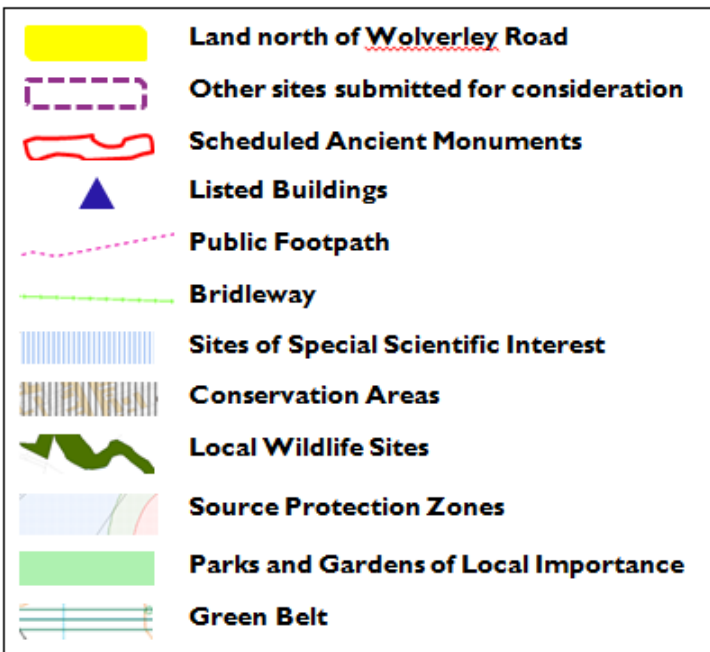


# Site 30: Land north of Wolverley Road

Unknown tonnage, 40Ha, access unknown, processing unknown.



### Legend



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| Sustainability Appraisal Objectives  | SA rating without mitigation | Potential effects   | Potential mitigation  |
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| <p><b>I: Landscape</b><br/>Safeguard and strengthen landscape character and quality and minimise negative visual impact.</p> | <p>--</p>                    | <p>The entire site falls within the 'Sandstone Estatelands' landscape type and is within Land Cover Pancel KS22.1a. Guidance on the 'Sandstone Estatelands' landscape type seeks to: conserve and restore the distinctive hedgerow pattern with priority given to primary hedgerows; identify opportunities for further large scale planting of woodlands and tree belts to strengthen the regular patterns of the landscape; conserve and restore parklands; conserve and enhance tree cover along watercourses; conserve the integrity of estate villages; promote the creation and appropriate management of natural vegetation communities along highways and other non-farmed areas; and promote the development of wide field margins for wildlife benefit.</p> <p>It is unlikely that all of the landscape characteristics could be maintained and enhanced during operational phases (especially conserving and restoring parklands, and further large-scale planting), although at least some of these could be respected operations. The characteristics could help to inform the restoration of the site as part of any green infrastructure proposals.</p> <p>There is the potential for cumulative landscape impacts to arise as a result of development of this site alongside the nearby 'Land South of Wolverley Road' and/or - to a lesser extent - 'Wolverley Glebe'. While each individual site may be able to be accommodated through appropriate landscape treatment, the in-combination impact of all of these sites may exceed the landscape capacity.</p> <p>The site is not close to any Area of Outstanding Natural Beauty.</p> <p>The site is not within or adjacent to any nationally-designated park or garden, but most of the site (around 58%) falls within part of Sionhill House undesignated park and garden of local importance. There are no</p> | <p>Consideration should be given to how to avoid visual disturbance in the most sensitive locations. All measures should be considered to protect sensitive receptors, and existing screening should be maintained. Consideration should be given to how the impacts arising from this site might combine with the 'Land south of Wolverley Road site' to the south-west.</p> |

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|   |   | <p>other local parks and gardens within 1.5km.</p> <p>Depending on how the site is developed, potential screening, and local topography, visual impact from minerals extraction may be experienced by householders, road traffic, and those using rights of way.</p> <p>The site is in a semi-rural location. It is largely surrounded by trees and green spaces on its western side, and it is roughly equidistant between Kidderminster to the south and Cookley to the north, both of which are around 380m away. It is also a similar distance from the former Lea Hall hospital site to the east.</p> <p>There are no dwellings within the site itself, but some individual dwellings and small groups of dwellings immediately outside the site boundary along the Wolverley road to the south, and along Brown Westhead Park to the west.</p> <p>Cumulative visual impact on some receptors could arise as a result of development here and at the nearby Strong Farms/Land north of Wolverley Road site(s).</p>   |   |
| <p><b>2: Biodiversity and geodiversity</b><br/>Conserve and enhance Worcestershire's biodiversity and geodiversity.</p> | - | <p>There are no SSSIs within or immediately adjoining the site, but there are four within 1.5km: Hurcott Pasture SSSI and Hurcott &amp; Podmore Pools SSSI are both around 660m to the south; Stourvale Marsh SSSI is 740m to the south-west; and Puxton Marshes SSSI is 960m south-west. All of these SSSI are designated for their biological interest. The site falls within SSSI impact risk zones.</p> <p>There are no Local Wildlife Sites (LWS) within or immediately adjoining the site, but there are eight LWS within 1.5km of the site boundary. Staffordshire and Worcestershire Canal Open Water – flowing LWS about 90m to the north; the River Stour Open Water – flowing LWS is 160m to the north-west; Gloucester Coppice Grassland Broadleaved Woodland LWS is 280m to the north-west; Wolverley Marsh Marshland Mire Swamp LQWS is 580m to the west; Wolverley Court Lock Carr Broadleaved Woodland Wet Woodland Marshland Swamp LWS is 590m to the south-west; Hurcott &amp; Podmore Pools (Pastures) Grassland Broadleaved Woodland Wet Woodland LWS is 620m to the south;</p> | <p>The likely impacts on sensitive receptors should be considered, and mitigation measures adopted where required. These may include stand-offs within the site, installing protective barriers and screening, etc.</p> |

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|  |          | <p>Puxton Marsh Marshland Swamp Broadleaved Woodland Grassland LWS is 730m to the south-west; and the Island Pool Open Water Swamp Marshland Wet Woodland Broadleaved Woodland LWS is 1,380m to the north-east.</p> <p>Given its proximity to the site, there is the potential for impacts to be felt on the Staffordshire and Worcestershire canal, although the established tree belt between the site and the LWS could reduce the likelihood of significant impacts. There may be some cumulative impacts as a result of development at the nearby 'Land South of Wolverley Road', with the most obvious receptor being the river Severn, given both sites' proximity to this LWS. Cumulative working, even if phased over the plan period, may increase the risk of habitat network severance. Severance can have a significant impact, particularly on species such as dormouse, which will be highly unlikely to recover from unpredictable events such as damage to population numbers which take the meta-population beneath Minimal Viable Population numbers. Indirect impacts could also occur as a result of the functional isolation of suitable woodlands by severance; even simple hedgerow removal can have this effect if at a particularly sensitive 'bottleneck' in the landscape. Similarly, repetitive displacement of reptiles across the landscape will have a significant impact on local populations. Further investigation of the nature and likelihood of cumulative impacts will be required if multiple minerals permissions are granted in this location over the plan period.</p> <p>There are no Local Geological sites within 1.5km.</p> <p>There are no areas of Ancient Semi-Natural Woodland (ASNW) within the site. Part of Gloucester Coppice ASNW is 280m to the north-west. An unnamed ASNW is 1,020m to the north. Part of Solcum Coppice ASNW is 1,270m to the north-west.</p> |   |
| <p><b>3: Cultural heritage, architecture and archaeology</b></p> | <p>-</p> | <p>There are no Scheduled Ancient Monuments (SAM) within the site, and none within 1.5km.</p> <p>There are no listed buildings within or adjoining the site, but there are 20</p>   | <p>As part of any historic environment assessment carried out to support a planning application, there should be a focus on those assets most clearly related</p> |



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| <p>Preserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.</p> |           | <p>within 1.5km of the site boundary. All of these are listed at grade II, except for three listed at grade II* (Wolverley House, 740m to the west; The Oak House, The Court Houser and the old School House, 790m to the west; and the Church of St John the Baptist, 770m to the west). The closest listed building to the site is the grade II listed Sion Hill House, about 260m to the south, although this is separated from the site by the Wolverley road and by established belts of trees.</p> <p>Given the distances and the existing screening, significant negative impacts are not considered likely to arise, and inter-visibility may be limited. There could still be some negative impacts on the listed buildings' settings through noise, dust, vibration, etc. Cumulative impacts could also arise if the nearby 'Land South of Wolverley Road' site were to be developed at the same time. Sion Hill House may be particularly sensitive to such cumulative impacts, as it is roughly equidistant from each site.</p> <p>The Staffordshire and Worcestershire Canal Conservation Area is within 70m to the north-west of the site, and the Wolverley Conservation Area is 600m to the west. The first of these could experience negative impacts on its setting as a result of minerals operations, but the existing dense belt of trees may help to reduce these impacts. Given that the 'Land south of Wolverley Road' site is nearby, and is even closer to the canal conservation area, the potential for cumulative impacts must also be recognised.</p> <p>This site is located within a landscape that was historically common heathland. There is a heightened potential for prehistoric flint artefacts at this location in common with comparable former heathland landscapes.</p> | <p>to the site by the nature of their setting, including Sion Hill House and the Staffordshire and Worcestershire Canal Conservation area. Consideration should be given to limiting any activities that could compromise the setting of these assets by adopting an appropriate buffer zone.</p> |
| <p><b>4: Material assets</b><br/>Ensure efficient use of land through safeguarding of mineral reserves, the best and most versatile agricultural</p>                  | <p>--</p> | <p>The entire site falls within grade 3 agricultural land. More detailed mapping, to show whether this is grade 3a or grade 3b, is not available, and would require site-specific assessment to determine). It is therefore unclear whether there would be a loss of grade 3a best and most versatile agricultural land.</p> <p>The site is wholly within the Green Belt. Whilst mineral extraction is not</p>   | <p>The site should be restored to avoid the long-term loss of BMV.</p> <p>Topsoil should be stripped and kept for site restoration or, where this would not be appropriate, re-used elsewhere.</p>  |

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| <p>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>an inappropriate use within the Green Belt (provided it preserves the openness of the Green Belt and does not conflict with the purposes of including land in Green Belt), any buildings required to support this use are likely to be inappropriate and would therefore require very special circumstances to be demonstrated.</p> <p>There are no village greens around the site.</p>  | <p>Any buildings in the Green Belt will need to demonstrate very special circumstances.</p>  |
| <p><b>5: Natural Resources</b><br/>Protect and enhance water and air quality.</p>   |  | <p><b>Water quality</b><br/>The south-eastern corner of the site (about 22% of the total site area) falls within Source Protection Zone 3. There is the potential for negative cumulative impacts on the SPZ, as the 'Wolverley Glebe' site to the north is also within the same zone.</p> <p><b>Air quality</b><br/>The site is not within an AQMA, but there are AQMAs at Kidderminster Ring Road to the south and at Hagley to the north-east and Dudley borough beyond this. If the material is moved through or close to these locations, there may be the potential to impact on the AQMAs. Any negative air quality impacts could be worsened through cumulative emissions if this site were to be developed in parallel with 'Land South of Wolverley Road' and/or 'Wolverley Glebe', both of which would also be likely to use HGVs and to pass along the same road network.</p> | <p>Measures to ensure the protection of water quality should be in place.</p> <p>Measures to protect air quality and reduce air pollution should be taken. Consideration should be given to potential impacts on the AQMAs at Kidderminster, Hagley, and Dudley.</p>   |
| <p><b>6: Climate Change and energy</b><br/>Reduce causes of and adapt to the impacts of climate change. Promote energy efficiency and energy generated from renewable</p> |  | <p>The nature of the restoration of the site, and its ability to contribute to climate change adaptation, is unclear at this stage. The site's impact on climate change will be affected by the greenhouse gas emissions generated through operations and transport. It is likely that materials will be excavated by diesel-powered equipment, and processed by diesel and electric plant.</p> <p>The proposed site would process excavated material on-site. Conveyors may offer a more climate-change friendly option for moving material to and from processing than HGVs.</p> <p>There will be climate change benefits to providing minerals close to the</p>  | <p>Restoration of the site can potentially offer climate change benefits over the site's pre-development state; green infrastructure proposals should be informed by the opportunity to provide for cooling and habitat links.</p> <p>All opportunities to minimise energy used in plant, buildings and transport should be taken, and lower-carbon energy sources</p> |

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| <p>energy and low-carbon sources.</p>   |           | <p>point of use, thereby avoiding unnecessary transport miles, but this will depend on the intended market for the extracted minerals, which is unknown. The site is in a semi-rural location, and is in close proximity to the urban area of Kidderminster. It is within 90m of the Staffordshire and Worcestershire canal to the north-west, which may offer the potential for water-borne transport, but this would depend on the availability of loading and unloading facilities and other issues. If viable, water transport could offer significant climate change benefits over conventional road transport.</p> <p>There may be opportunities to incorporate renewable and low-carbon energy during operations and as part of restoration.</p> | <p>used wherever possible.</p>  |
| <p><b>7: Flooding</b><br/>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>0</p>  | <p>The site is not within any floodzone. The floodzone associated with the river Stour is around 100m away to the north-west, separated from the site by the Staffordshire and Worcestershire canal. There is a negligible spot of 1 in 1000 surface water flooding in the western area of the site, and the site's northern boundary borders another small area of 1 in 1000.</p>  | <p>The requirement to maintain flood storage should inform the restoration of the site as part of a green infrastructure approach.</p>  |
| <p><b>8: Access to Services</b><br/>Improve the quality of, and equitable access to, local services and facilities, regardless of age, gender, ethnicity, disability, socio-economic status or</p>                                | <p>--</p> | <p>Footpath 624 runs roughly east to west through the site's western side, with footpaths 622 and 623 following the site's western boundary. Bridleway 626 runs roughly north to south through the site, before following part of the site's northern boundary and continuing north-eastwards.</p> <p>The footpath and bridleway running through the site may be compromised by the development of this site, and may require temporary or permanent closure or diversion.</p> <p>The site could negatively affect users of these rights of way and others in the vicinity, through visual intrusion, noise, etc. The potential for impacts</p>   | <p>Effective diversions will be required where rights of way cannot be maintained. In the longer term, restoration proposals should make provision for access and movement as part of a green infrastructure approach, which could see access improved compared to the pre-development situation.</p> |

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| <p>educational attainment.</p>  |   | <p>to be positive - providing a feature of interest to footpath users – cannot be ruled out entirely.</p>  |  |
| <p><b>9: Health and amenity</b><br/>                 Improve the health and well-being of the population and reduce inequalities in health.</p>                               | - | <p>The site is in a semi-rural location. It is largely surrounded by trees and green spaces on its western side, and it is roughly equidistant between Kidderminster to the south and Cookley to the north, both of which are around 380m away. It is also a similar distance from the former Lea Hall hospital site to the east.</p> <p>There are no dwellings within the site itself, but some individual dwellings and small groups of dwellings immediately outside the site boundary along the Wolverley road to the south, and along Brown Westhead Park to the west. Cumulative impacts on sensitive receptors could arise if this site were to be developed in parallel with 'Land South of Wolverley Road' and/or – to a lesser extent – 'Wolverley Glebe'.</p> <p>There are no major accident hazard pipelines or electricity transmission lines running through the site or in close proximity to the site.</p> | <p>Appropriate safeguards should be put in place to ensure residential amenity and reduce the risk of negative health impacts as a result of minerals extraction at this site. This could include an appropriate stand-off between operations and nearby residential properties and other sensitive receptors, as well as bunds/screening where appropriate.</p> |
| <p><b>10: Waste</b><br/>                 Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.</p> | 0 | <p>There are no waste sites within or in close proximity to the site. The nearest waste site is a physical treatment site 2,430m to the south in Kidderminster.</p> <p>The likely scale and nature of wastes arising from minerals extraction and processing is unclear at this stage.</p>   | <p>Aside from standard site waste management practices set out in national and local policy, the need for any mitigation in relation to this SA objective has not been identified.</p>   |
| <p><b>11: Traffic and transport</b><br/>                 Reduce the need to travel and move towards more sustainable travel patterns.</p>                                     | - | <p>There are no railheads in close proximity to the site.</p> <p>It is within 90m of the Staffordshire and Worcestershire canal to the north-west, which may offer the potential for water-borne transport, but this would depend on the availability of loading and unloading facilities and other issues. If viable, water transport could offer a less polluting alternative to road-based HGVs, but this will depend on where the material is processed and the destination of any proposed onward transport post-processing.</p> <p>If road transport is used, the A449 is an advisory HGV route, and so is</p>   | <p>Transport movements by sustainable means, including water-borne transport, should be maximised.</p>   |



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|  |          | <p>appropriate for this use - although the roads to gain access to the A449 may be less suitable, depending on which route is taken. Reliance on road transport means that emissions and other associated negative aspects of HGV movements will inevitably arise. Cumulative transport impacts could arise if this site were to be developed in parallel with 'Land South of Wolverley Road' and/or 'Wolverley Glebe', all of which would also be likely to see HGV movements along the same road network.</p> <p>There are bus stops on Park Gate Road, some 300m to the east; Wolverley Road, 640m to the west; and to the south and north of the Wolverhampton road (at 330m and 510m distance, respectively). These services variously serve Kinver, Kidderminster, Halesowen, and other settlements. There are no railway stations in close proximity.</p> |  |
| <p><b>I2: Growth with prosperity for all</b><br/>Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.</p>       | <p>+</p> | <p>The site would directly support the minerals sector, and would also play a role in ensuring sufficient minerals are available to build the buildings and associated infrastructure needed for Worcestershire's economic growth. Its allocation as a minerals site could potentially prevent or delay non-minerals development that could support Worcestershire's economy and infrastructure, but no such development has been identified at this stage.</p>  | <p>The LPA and potential developers should remain aware of adopted or proposed development allocations for alternative uses in county and district policy.</p> |
| <p><b>I3: Provision of housing</b><br/>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>+</p> | <p>The site would help to deliver minerals to build the housing and associated development to provide clean, safe and pleasant environments. While its allocation as a minerals site could potentially prevent or delay housing development within or near the site, no such proposals have been identified at this stage.</p>   | <p>The LPA and potential developers should remain aware of adopted or proposed housing allocations in county and district policy.</p>                          |