



Worcestershire Mineral Site Allocations Development Plan Document

Sustainability Appraisal

Worcestershire County Council

Final report

Prepared by LUC

May 2021

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Land Use Consultants Limited

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Chapter 1

Introduction

1.1 Worcestershire County Council (WCC) commissioned LUC to carry out Sustainability Appraisal (SA) of the Mineral Site Allocations Development Plan Document (DPD). WCC is the Minerals Planning Authority for the county of Worcestershire. Once adopted, the DPD will sit alongside and support the delivery of the Minerals Local Plan (MLP) by identifying specific sites and preferred areas for minerals extraction.

1.2 SA is an assessment process designed to consider and report upon the significant sustainability issues and effects of emerging plans and policies, including their reasonable alternatives. SA iteratively informs the plan-making process by helping to refine the contents of such documents, so that they maximise the benefits of sustainable development and avoid, or at least minimise, the potential for adverse effects.

1.3 The purpose of a Scoping Report is to provide the context for and determine the scope of the SA of the DPD and to set out the proposed methodology for undertaking the later stages of the SA. This Scoping Report sets out an overview of the relevant policy context for sustainability issues relevant to the DPD and sets out baseline information in relation to a number of sustainability topics. This contextual information is used to identify the key sustainability issues and opportunities that the DPD can address. The key sustainability issues and opportunities are then used to develop a framework of SA Objectives that will be used to appraise the likely significant effects of the constituent parts of the DPD.

1.4 The purpose of this consultation is to seek views on the proposed approach to the SA, in particular:

1. Whether the scope of the SA is appropriate for considering the role of the Mineral Site Allocations DPD to help support the delivery of the Minerals Local Plan.
2. Whether there are any additional plans, policies or programmes that are relevant to the SA policy context that should be included.
3. Whether the baseline information provided is robust and comprehensive, and provides a suitable baseline for the SA of the Mineral Site Allocations DPD.
4. Whether there are any additional SA issues relevant to the Mineral Site Allocations DPD that should be included.
5. Whether the SA Framework is appropriate and includes a suitable set of SA objectives and site-based assumptions for assessing the effects of the options included within the Mineral Site Allocations DPD and reasonable alternatives.

Worcestershire Mineral Site Allocations DPD

1.5 WCC's current minerals planning policies are set out in the 'saved' policies of the adopted Minerals Local Plan. WCC is in the process of updating these and the saved policies will be replaced by two documents; the new (emerging) Minerals Local Plan (MLP) and the Mineral Site Allocations DPD. The MLP has been submitted to the Secretary of State for Housing, Communities and Local Government for independent examination. The MLP is a strategic document that sets out the level of mineral resources required in the county, how these will be delivered and broad areas for minerals extraction.

1.6 The Site Allocations DPD will sit alongside the MLP, providing more detail on the location of future minerals development by allocating specific sites and preferred areas for minerals extraction. WCC originally intended to allocate sites within the Minerals Local Plan itself, which would have left no need for a separate Mineral Site Allocations DPD. WCC undertook five formal 'call for sites' between 2014 and 2018. The Local Development Scheme was revised in July 2018, and this committed WCC to preparing a separate Mineral Site Allocations DPD so that the strategic elements of the MLP could be progressed as quickly as possible to provide certainty over the vision, objectives, spatial strategy and development management policies, whilst also building in flexibility for mineral site allocations to be reviewed and revised if necessary without affecting the strategic policies set out in the Minerals Local Plan.

1.7 Following this decision, consultation on the proposed methodology for site allocations was carried out in winter 2018/19, and preparation of the DPD fully commenced in Summer 2019. As the MLP does not allocate specific sites or preferred areas, all sites proposed so far (except those which have already been granted planning permission, or which have been withdrawn by their promoter) will be considered afresh for allocation as the DPD is progressed. In addition, a further call for sites was undertaken in Spring 2020, which provided an opportunity to promote potential sites for mineral extraction, processing or supporting infrastructure for consideration in the preparation of the Minerals Site Allocations DPD.

1.8 The DPD plan area is within the administrative boundary of Worcestershire County, which is shown in Figure 1.1.

Sustainability Appraisal and Strategic Environmental Assessment

1.9 Under the Planning and Compulsory Purchase Act 2004, SA is mandatory for Development Plan Documents. For these documents it is also necessary to conduct an environmental assessment in accordance with The Environmental

Assessment of Plans and Programmes Regulations 2004 (SI 2004/1633), as amended by The Environmental Assessments and Miscellaneous Planning (Amendment) (EU Exit) Regulations 2018 (SI 2018/1232). As set out in the explanatory Memorandum accompanying the Brexit amendments [See reference 1], they are necessary to ensure that the law functions correctly following the UK’s exit from the EU. No substantive changes are being made by this instrument to the way the SEA regime operates. Therefore, the SEA regulations remain in force and it is a legal requirement for the Site Allocations DPD to be subject to SA and SEA throughout its preparation. In addition to complying with legal requirements, the approach being taken to the SA of the Site Allocations DPD will be based on current best practice and the guidance on SA/SEA set out in the national Planning Practice Guidance.

1.10 The requirements to carry out SA and SEA are distinct, although it is possible to satisfy both using a single appraisal process (as advocated in the Planning Practice Guidance), whereby users can comply with the requirements of the SEA Regulations through a single integrated SA process – this is the process that is being undertaken in Worcestershire. From here on, the term ‘SA’ should therefore be taken to mean ‘SA incorporating the requirements of the SEA Regulations’. The main stages of the plan-making process, and how these correspond to the SA process, are set out in Table 1.1, with scoping (presented in this document) being Stage A.

Table 1.1: Stages in plan making and corresponding stages of SA

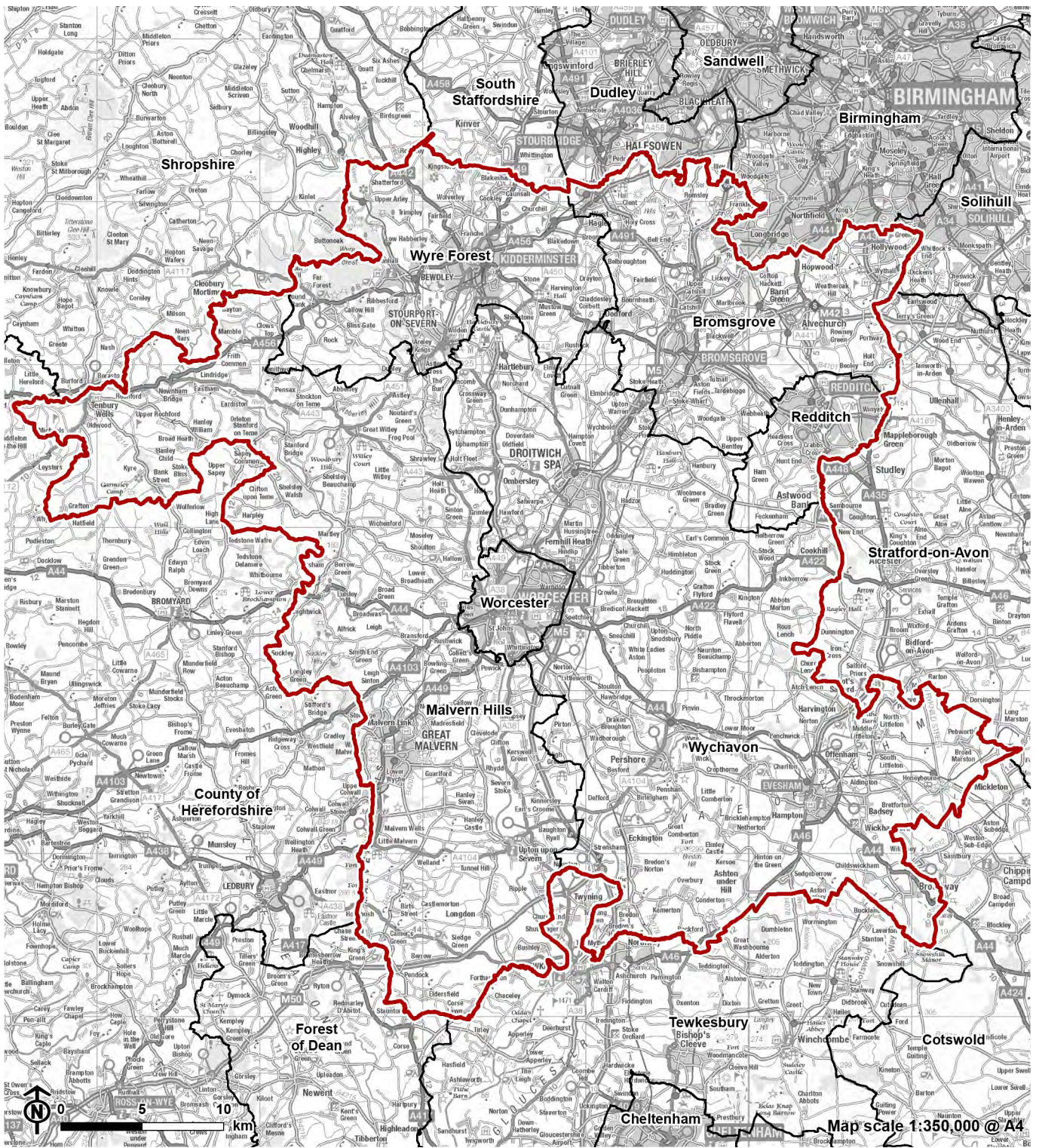
Stage of plan making	Stage of SA
Step 1: Evidence gathering and engagement	Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope
Step 2: Production	Stage B: Developing and refining options and assessing effects Stage C: Preparing the Sustainability Appraisal Report

Stage of plan making	Stage of SA
	Stage D: Seek representations on the DPD and the Sustainability Appraisal Report
Step 3: Examination	Not applicable
Step 4 and 5: Adoption and monitoring	Stage E: Monitoring the significant effects of implementing the DPD

Each stage of SA set out in Table 1.1 has a number of associated tasks, as set out below:

- Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope.
 - A1: Setting out the policy context for the SA of the Site Allocations DPD, such as key policies and strategies that influence what the DPD and the SA needs to consider.
 - A2: Setting out the baseline for the SA of the Site Allocations DPD i.e. the current and likely future environmental, social and economic conditions in Worcestershire.
 - A3: Drawing on A1 and A2, identify the particular sustainability problems and/or opportunities ('issues') that the Site Allocations DPD and SA should address.
 - A4: Drawing on A1, A2 and A3, develop a framework of SA Objectives and assessment criteria to appraise the constituent parts of the Site Allocations DPD in isolation and in combination.
 - A5: Consulting on the scope of the SA.
- Stage B: Developing and refining options and assessing effects.
 - B1: Testing the DPD objectives against the SA Framework.
 - B2: Developing the DPD options.
 - B3: Evaluating the effects of the DPD.

- B4: Considering ways of mitigating adverse effects and maximising beneficial effects.
- B5: Proposing measures to monitor the significant effects of implementing the DPD.
- Stage C: Preparing the Sustainability Appraisal Report.
 - C1: Preparing the SA Report.
- Stage D: Seek representations on the DPD and the Sustainability Appraisal Report.
 - D1: Public participation on DPD and the SA Report.
 - D2: Appraising significant changes.
 - D3: Appraising significant changes resulting from representations.
 - D4: Making decisions and providing information.
- Stage E: Monitoring the significant effects of implementing the DPD.
 - E1: Finalising aims and methods for monitoring.
 - E2: Responding to adverse effects.



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CB:KS EB:Bean_C LUC FIG1_1_11159_r0_Plan_Area_A4P 08/04/2021
 Source: OS

Figure 1.1: Worcestershire Minerals Site Allocation DPD Plan Area

- Worcestershire County
- Local authority

Approach to Scoping

1.11 This Scoping Report is based on the SA scoping information compiled for the Worcestershire Minerals Local Plan. This was originally published in the Worcestershire Minerals Local Plan Sustainability Appraisal Scoping Report (2012). It included a joint SA framework developed over a number of years by the county and district councils in Worcestershire. The framework was adapted and modified to reflect issues relevant to the Minerals Local Plan, and the SA of the Publication Version of the Minerals Local Plan (2019) presented updated baseline information and policy context. Whilst this Scoping Report for the Mineral Site Allocations DPD draws on both the structure and content of the SA of the MLP, necessary changes and updates to the evidence base and SA framework have been made to reflect the most recent policy and data, and the role and scope of the DPD.

1.12 As set out above, there are a number of tasks to be completed within the Scoping stage (Stage A). This Scoping Report fulfils these requirements with a view to establishing the likely significant effects of constituent parts of the Site Allocations DPD in isolation and in combination. In accordance with national Planning Practice Guidance (PPG), published on-line by the Government, the Scoping Report should be proportionate and relevant to the Site Allocations DPD, focussing on what is needed to identify and assess the likely significant effects.

Meeting the requirements of the SEA Regulations

1.13 The relevant sections of the Scoping Report that are considered to meet the SEA Regulations requirements are signposted below (the remainder will be met during subsequent stages of the SA of the Site Allocations DPD). This information will be included in the full SA Report at each stage of the SA to show how the requirements of the SEA Regulations have been met through the SA process.

1.14 The SEA Regulations require the responsible authority to prepare, or secure the preparation of, an ‘environmental report’, which in this case will comprise the SA report. The report shall identify, describe and evaluate the likely significant effects on the environment of (requirements in green shaded text below, where each requirement is met is provided in the bullets below):

Implementing the plan or programme; and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme. (Regulation 12(1) and (2) and Schedule 2)

- The full SA Report produced to accompany consultation on the Site Allocations DPD will constitute the ‘environmental report’, and will be produced at a later stage in the SA process, but will include the relevant parts of the Scoping Report as noted below.

An outline of the contents and main objectives of the plan or programme, and of its relationship with other relevant plans and programmes.

- Covered in Chapter 1 and Chapter 2 and Appendix A.

The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.

- Covered in Chapter 3.

The environmental characteristics of areas likely to be significantly affected.

- Covered in Chapter 3.

Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directive 79/409/EEC on the conservation of wild birds and the Habitats Directive.

- Covered in Chapter 3.

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

- Covered in Chapter 2 and Appendix A.

The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive effects, and secondary, cumulative and synergistic effects, on issues such as: (a) biodiversity; (b) population; (c) human health; (d) fauna; (e) flora; (f) soil; (g) water; (h) air; (i) climatic factors; (j) material assets; (k) cultural heritage, including architectural and archaeological heritage; (l) landscape; and (m) the interrelationship between the issues referred to in sub-paragraphs (a) to (l).

- Requirement will be met at a later stage in the SA process, however, Appendix B sets out how significant effects will be determined for each SA objective when assessing specific sites and preferred areas.

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.

- Requirement will be met at a later stage in the SA process.

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.

- Requirement will be met at a later stage in the SA process.

A description of the measures envisaged concerning monitoring in accordance with regulation 17.

- Requirement will be met at a later stage in the SA process.

A non-technical summary of the information provided under paragraphs 1 to 9.

- Requirement will be met at a later stage in the SA process.

The report shall include such of the information referred to in Schedule 2 to these Regulations as may reasonably be required, taking account of:

- Current knowledge and methods of assessment;
- The contents and level of detail in the plan or programme;

- The stage of the plan or programme in the decision-making process; and
 - The extent to which certain matters are more appropriately assessed at different levels in that process in order to avoid duplication of the assessment. (Regulation 12 (3))
- This Scoping Report and the Environmental Reports will adhere to this requirement.

In terms of consultation, the SEA Regulations require that:

When deciding on the scope and level of detail of the information that must be included in the environmental report, the responsible authority shall consult the consultation bodies. (Regulation 12(5))

- This Scoping Report will be published for consultation with the three statutory bodies (the Environment Agency, Historic England, and Natural England), other stakeholders and the public.

Every draft plan or programme for which an environmental report has been prepared in accordance with regulation 12 and its accompanying report (“the relevant documents”) shall be made available for the purposes of consultation in accordance with the following provisions of this regulation.

As soon as reasonably practical after the preparation of the relevant documents, the responsible authority shall:

- Send a copy of those documents to each consultation body;
- Take such steps as it considers appropriate to bring the preparation of the relevant documents to the attention of the persons who, in the authority’s opinion, are affected or likely to be affected by, or have an interest in the decisions involved in the assessment and adoption of the

plan or programme concerned, required under the Environmental assessment of Plans and Programmes Directive (“the public consultees”);

■ Inform the public consultees of:

- (i) the address of the website at which the relevant documents may be viewed and downloaded free of charge;
- (ii) the fact that a copy of the relevant documents may be obtained by email from the responsible authority;
- (iii) the fact that a copy of the relevant documents may be obtained by post from the responsible authority, provided that it is reasonably practicable for the authority to provide a copy by post;
- (iv) the address, email address and telephone number for the purpose of requesting a copy of the relevant documents either by email or by post;
- (v) whether a charge will be made for copies of the relevant documents provided by post and the amount of any charge; and
- (vi) the telephone number which can be used to contact the responsible authority for enquiries in relation to the relevant documents

The period referred to in paragraph (2) (d) must be of such length as will ensure that the consultation bodies and the public consultees are given an effective opportunity to express their opinion on the relevant documents.

(Regulation 13 (1), (2), and (3))

- Public consultation on the Site Allocations DPD and accompanying SA Reports will take place as the DPD develops.

Where a responsible authority, other than the Secretary of State, is of the opinion that a plan or programme for which it is the responsible authority is likely to have significant effects on the environment of another Member State, it shall, as soon as reasonably practicable after forming that opinion:

- Notify the Secretary of State of its opinion and of the reasons for it; and
- Supply the Secretary of State with a copy of the plan or programme concerned, and of the accompanying environmental report. (Regulation 14 (1))

- Unlikely to be relevant to the Site Allocations DPD, as there will be no effects beyond the UK.

1.15 In terms of taking the SA Report and the results of the consultations into account in decision-making, the SEA Regulations require (relevant extracts of Regulation 16):

As soon as reasonably practicable after the adoption of a plan or programme for which an environmental assessment has been carried out under these Regulations, the responsible authority shall:

- publish the plan or programme, as adopted, its accompanying environmental report and a statement containing the particulars specified in paragraph (4) (“the relevant adoption documents”) on a public website at which the documents may be viewed and downloaded free of charge;
- provide a copy of the relevant adoption documents by email to any person who requests a copy, as soon as reasonably practicable after receipt of that person’s request;

- provide one copy of the relevant adoption documents by post to any person who requests a copy, as soon as reasonably practicable after receipt of that person's request, unless it is not reasonably practicable to provide a copy by post for reasons connected to the effects of coronavirus, including restrictions on movement;
 - make available a telephone number for the public to make enquiries in relation to the relevant adoption documents;
- Requirement will be met at a later stage in the SA process.

As soon as reasonably practicable after the adoption of a plan or programme the responsible authority shall inform (i) the consultation bodies; (ii) the persons who, in relation to the plan or programme, were public consultees for the purposes of regulation 13; and (iii) where the responsible authority is not the Secretary of state, the Secretary of State, that the plan or programme has been adopted, and a statement containing the following particulars:

How environmental considerations have been integrated into the plan or programme;

How the environmental report has been taken into account;

How opinions expressed in response to: (i) the invitation in regulation 13(2)(d); (ii) action taken by the responsible authority in accordance with regulation 13(4), have been taken into account;

How the results of any consultations entered into under regulation 14(4) have been taken into account;

The reasons for choosing the plan or programme as adopted, in the light of the other reasonable alternatives dealt with; and

The measures that are to be taken to monitor the significant environmental effects of the implementation of the plan or programme.

- Requirement will be met at a later stage in the SA process.

1.16 The SEA Regulations also require that the responsible authority shall monitor the significant effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action (Regulation 17(1)). This requirement will be met after adoption of the Site Allocations DPD.

Other assessments

1.17 Other environmental and social assessments are being undertaken for the Site Allocations DPD, which will inform the SA, as summarised below.

Habitats Regulations Assessment

1.18 The Conservation of Habitats and Species Regulations 2017 require a Habitats Regulations Assessment (HRA) to be undertaken, when necessary, in preparing a project or plan.

1.19 HRA should ensure that, as part of the planning process, land use plans protect the integrity of European sites (Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar sites and sites on draft lists for protection). The DCLG guidance, 'Planning for the Protection of European Sites: Appropriate Assessment' (2006) made clear that HRA and SA are two separate processes, which should be reported on separately.

1.20 An HRA will be undertaken for the Site Allocations DPD and the results of that assessment will be taken into account in the SA, where relevant.

Strategic Flood Risk Assessment

1.21 A Strategic Flood Risk Assessment (SFRA) was prepared to support the MLP [See reference 2]. This report "outlines the positive and negative effects and focuses on the links between them and mineral, mostly sand and gravel and potential clay working". The MLP SFRA recognised that negative effects on water quality and quantity could arise due to changes to hydrology as a result of minerals development, such as physical disturbance to aquifers and lowering of groundwater levels, particularly if dewatering is required. Restoration of minerals sites can also affect the quality of ground and surface water, particularly where mineral voids are restored using infilling. Development may contaminate water through spills of hazardous substances, as well as modifying water bodies and building infrastructure on areas at risk of flooding. Minerals development can also lead to beneficial effects on water quality and quantity where it leads to river restoration, habitat creation and flood attenuation or sustainable drainage, particularly through restoration. Restoration schemes can also bring wider benefits, including benefits to health and amenity, tourism, climate change adaptation and remediation of contaminated land.

1.22 The Worcestershire Mineral Site Allocations DPD Level 1 Strategic Flood Risk Assessment (2020) ('DPD SFRA') builds on the MLP SFRA to focus on the site scale. The DPD SFRA reviews the 29 site options identified in terms of flood risk from all sources, and taking into account climate change and flood defence/management infrastructure. The DPD SFRA will be used to inform the SA, as described in Appendix B.

Equalities Impact Assessment

1.23 The DPD will be subject to Equalities Impact Assessment (EqIA) screening. If this screening process suggests that the DPD could have

disproportionate impacts on certain groups of people, the DPD will be subject to full EqlA.

Structure of this report

1.24 This report is the SA Scoping Report for the Worcestershire Minerals Site Allocations DPD. This chapter provides an introduction to the SA of the Site Allocations DPD. This Scoping Report is based on scoping information compiled for the MLP, reviewed as necessary to ensure the policy and baseline context for the SA of the Site Allocations DPD is up to date and the SA framework is fit for purpose. The remainder of this report is structured into the following chapters:

- Chapter 2: Policy Context – provides a summary of the most relevant policies that provide the context for the preparation of the Site Allocations DPD. A more detailed review is set out in Appendix A.
- Chapter 3: Baseline Information – provides an overview of the current baseline with regards to a number of sustainability topic areas, as well as setting out the key issues and likely evolution of the baseline if the Site Allocations DPD were not to be implemented.
- Chapter 4: SA Framework – sets out the proposed SA framework for the subsequent stages of SA. This is based on the MLP SA framework, which has been reviewed to take into account the updated context, baseline and key issues identified in Chapter 2 and Chapter 3, as well as the likely influence of the Site Allocations DPD on the various sustainability issues.
- Chapter 5: Consultation and Next Steps – gives an overview of the consultation process and the steps for the Site Allocations DPD and SA going forward.
- Appendix A: Review of Relevant Plans and Programmes – supports Chapter 2 in providing a more thorough review of relevant plans and programmes for the Site Allocations DPD.
- Appendix B: How Site Options Will Be Appraised – sets out the factors to be considered in carrying out assessments against each SA objective and

Chapter 1 Introduction

how significant effects will be determined through the use of assumptions and thresholds.

Chapter 2

Policy Context

2.1 The Site Allocations DPD is not being prepared in isolation and is greatly influenced by other plans and programmes and by broader sustainability objectives. The DPD needs to be consistent with international and national guidance and strategic planning policies, and should contribute to the goals of a wide range of other programmes and plans. It must also conform to environmental protection legislation and the sustainability objectives established at the international, national and local levels.

2.2 Schedule 2 of the SEA Regulations requires information to be provided on the following (numbering relates to the specific numbered list in Schedule 2):

(1) “an outline of the...relationship with other relevant plans or programmes”; and

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

2.3 A review of the other plans, policies and programmes that are relevant to the Site Allocations DPD is presented in Appendix A. In line with the requirements of the SEA Regulations, this identifies the relationship that the plans and policies have with the development of the DPD, and also shows how the environmental, social and economic objectives contained within those plans and policies have been taken into account during preparation of the DPD and also the SA.

2.4 As mentioned in Chapter 1, the Site Allocations DPD will sit alongside the emerging MLP, once adopted, and therefore will need to be in conformity with the strategic policies set out in that document. Planning applications for minerals development will be considered against both documents.

2.5 The plans, policies and programmes reviewed in Appendix A are listed below, followed by an overview of some of the key issues from the review.

- International plans, policies and programmes:
 - Paris Agreement to the UNFCCC (2015)
 - Council of Europe (1950) European Convention on Human Rights
 - European Landscape Convention (Florence Convention) (2000)
 - Convention for the Protection of the Architectural Heritage of Europe (The Granada Convention) (1985)
 - Convention on the Protection of the Archaeological Heritage (Valetta Convention) (1992)
- National plans, policies and programmes:
 - MHCLG (2019) National Planning Policy Framework
 - UK Government (2011) Localism Act
 - UK Government (1990) Planning (Listed Buildings and Conservation Areas) Act (as amended)
 - UK Government (1979) Ancient Monuments and Archaeological Areas Act
 - UK Government (2020) The Environment Bill
 - UK Government (2000) The Countryside and Rights of Way Act
 - UK Government (1981) Wildlife and Countryside Act (as amended)
 - UK Government (1995) The Environment Act (as amended)
 - UK Government (2006) Natural Environment and Rural Communities Act

- UK Government (2017) The Conservation of Habitats and Species Regulations (as amended)
- UK Government (2008) Climate Change Act (as amended)
- UK Government (2010) Flood and Water Management Act
- DEFRA (2005) Securing the Future: UK Sustainable Development Strategy
- DCLG (2009) National and regional guidelines for aggregates provision in England 2005-2020
- MHCLG (2014) National Planning Policy for Waste
- DEFRA (2021) Waste Management Plan for England
- DEFRA (2018) A Green Future: Our 25 Year Plan to Improve the Environment
- DEFRA (2020) England Tree Strategy consultation
- UK Government (2011) The Carbon Plan: Delivering our low carbon future
- DEFRA (2011) Water White Paper – Water for Life
- DEFRA (2019) Clean Air Strategy
- DoH (2010) Healthy Lives, Health People: our Strategy for Public Health in England
- MHCLG (live guidance) Planning Practice Guidance
- Historic England (2016) Sustainability Appraisal and Strategic Environmental Assessment, Historic England Advice Note 8
- Historic England (2020) Minerals Extraction and Archaeology: Historic England Advice Note 13
- Natural England and DEFRA (2014) Guidance on the Biodiversity Duty: Public Authority Duty to have Regard to Conserving Biodiversity
- Sport England (2019) Planning for Sport Guidance
- Regional plans, policies and programmes:

- BEIS and MHCLG (2019) West Midlands Local Industrial Strategy
- Greater Birmingham & Solihull Local Enterprise Partnership (LEP) (2016) A Greater Birmingham For A Greater Britain: Strategic Economic Plan 2016-2030
- County plans, policies and programmes:
 - Worcestershire Local Enterprise Partnership (LEP) (2014) World Class Worcestershire: Our Strategic Economic Plan (SEP)
 - Worcestershire County Council (2019) Emerging Worcestershire Minerals Local Plan: Publication Version
 - The Worcestershire Partnership (2011) Worcestershire Single Sustainable Community Strategy
 - Worcestershire County Council (2020) Worcestershire Local Transport Plan 4 2018-2030
 - Worcestershire County Council (2012) Worcestershire Climate Change Strategy 2012-2020
 - Worcestershire Local Enterprise Partnership (2018) Worcestershire Energy Strategy 2019-2030
 - Worcestershire County Council (2012) Worcestershire Landscape Character Assessment Supplementary Guidance
 - Worcestershire County Council (2013) Worcestershire Green Infrastructure Strategy 2013-2018
 - Worcestershire County Council (2018) Worcestershire Biodiversity Action Plan
 - Worcestershire County Council (2012) Worcestershire Historic Landscape Characterisation
 - Worcestershire County Council (2007) Archaeology and aggregates in Worcestershire: A resource assessment and research agenda
 - Worcestershire County Council (2012) Waste Core Strategy for Worcestershire: Adopted Waste Local Plan 2021-2027

- Other plans, policies and programmes:
 - DEFRA and Environment Agency (2016) Water for life and livelihoods, Part 1: Severn river basin district River basin management plan
 - Environment Agency (2009) River Severn Catchment Flood Management Plan
 - Cotswolds Conservation Board (2018) Cotswolds AONB Management Plan (2018-2023)
 - Cotswolds Conservation Board (2013) Position Statement: Minerals and Waste Planning (as amended)
 - UK Government (1884-1995) Malvern Hills Acts
 - Malvern Hills AONB Partnership (2019) Malvern Hills AONB Management Plan 2019-2024

Key international plans, policies and programmes

2.6 At the international level, there are a number of European Directives that have shaped Sustainability Appraisal, planning and environmental, social and economic regulation, including Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment (the 'SEA Directive'). The UK left the European Union on the 31st January 2020. Since the UK's exit from the EU, UK legislation that transposes EU Regulations and Directives continues to apply, with a small number of changes to ensure these function within a non-member state, as set out in the 'EU Exit' versions.

2.7 There are also a number of international treaties relating to environmental protection ratified by the UK. The Paris Agreement [\[See reference 3\]](#) sets targets to reduce greenhouse gas emissions; the Florence Convention [\[See reference 4\]](#) promotes protection and management of landscapes; and the Granada [\[See reference 5\]](#) and Valetta Conventions [\[See reference 6\]](#) seek to protect heritage assets. The European Convention on Human Rights [\[See](#)

[reference 7](#)] sets out a wide range of rights, but in terms of the DPD and this SA it is relevant in terms of the need to consider equalities, health and amenity.

Key national plans, policies and programmes

2.8 The National Planning Policy Framework (NPPF) [\[See reference 8\]](#) was published in March 2012 and has subsequently been updated in 2018 and 2019. It sets out Government's planning policies for England and how they should be applied when producing Local Plans for housing and other development, which in turn provide the background against which applications for planning permission are decided. The National Planning Policy for Waste (NPPW) [\[See reference 9\]](#) was published in October 2014, which sets out the Government's detailed waste planning policies. The Planning Practice Guidance (PPG) web-based resource [\[See reference 10\]](#) was launched in March 2014, it adds further context to the NPPF and it is intended that the two are read together. The NPPF, NPPW and PPG together with associated saved and new technical guidance constitute the Government's planning policies and guidance.

2.9 With regards to the sustainable use of minerals, the NPPF states that planning policies should:

- Provide for the extraction of mineral resources of local and national importance.
- Take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials.
- Safeguard mineral resources and related infrastructure, and encourage prior extraction of minerals.
- Set out criteria or requirements to ensure that permitted and proposed operations do not have unacceptable adverse impacts on the natural and historic environment or human health.

- Ensure that worked land is reclaimed appropriately at the earliest opportunity.

2.10 Many of these are already addressed in the emerging MLP but should also be borne in mind for the Site Allocations DPD.

2.11 Along with the sustainable use of minerals, the NPPF sets out information about the purposes of local plan-making. The NPPF emphasises that the purpose of the planning system is to contribute to the achievement of sustainable development, which should be delivered through the preparation and implementation of plans and the application of the policies in the Framework. The NPPF also sets out policies relating to social, environmental and economic factors, including promoting healthy and safe communities, promoting sustainable transport, making effective use of land and conserving and enhancing the natural and historic environments.

2.12 In terms of biodiversity, the Habitats Regulations [\[See reference 11\]](#) are of particular importance to the SA, as these led to the designation of European sites and the requirement for HRA. The SA will draw on the results of the HRA of the DPD to inform assessments on biodiversity. Other relevant legislation, including the emerging Environment Bill 2020, the Natural Environment and Rural Communities (NERC) Act 2006, the Countryside and Rights of Way Act 2000 and the Environment Act 1995 among others, seek to protect and enhance many aspects of the natural environment, including biodiversity, water quantity and quality, air quality and access to the countryside. In addition to this legislation, in 2018, DEFRA published A Green Future: Our 25 year Plan to Improve the Environment [\[See reference 12\]](#), which details how the government will work with communities and businesses to improve the overall state of the environment. The 25 Year Environment Plan, as it is known, is a key document, which sets goals for improving environmental quality, including achieving clean air, water, thriving wildlife and landscapes, whilst using natural resources more sustainably and mitigating pressures on the environment.

2.13 In terms of the historic environment, national legislation protects key assets through the Planning (Listed Buildings and Conservation Areas) Act

1990 (as amended) and the Ancient Monuments and Archaeological Areas Act 1979. Appendix A also includes guidance documents from Historic England regarding SA and minerals extraction, which will be considered throughout the SA process.

2.14 In terms of climate change, in June 2019, the Climate Change Act 2008 was amended to adopt new legally binding targets for emissions reduction in the UK by 2050. The original target of at least an 80% reduction in greenhouse gas emissions by 2050 (against a 1990 baseline) has been altered to a target of net-zero GHG emissions by 2050. The Carbon Plan: Delivering our low carbon future (2011) [\[See reference 13\]](#) also sets out how the UK Government will seek to reduce greenhouse gas emissions, although this was set out before the 2019 update to the Climate Change Act.

2.15 The Flood and Water Management Act 2010 and the Water White Paper (2011) [\[See reference 14\]](#) set out policies for managing water, in terms of flood risk, water quality and promoting sustainable use of water resources, recognising the need to balance a growing demand for water with environmental protection.

2.16 DEFRA's Clean Air Strategy (2019) [\[See reference 15\]](#) seeks to improve air quality by reducing pollution from a wide range of sources, including energy generation and transport to improve environmental quality and human health. Also in terms of health, the Department of Health's (DoH) Strategy for Public Health in England (2010) [\[See reference 16\]](#) seeks to identify opportunities for better health and for reducing health inequalities. Appendix A also includes Sport England's Planning for Sport Guidance (2019) [\[See reference 17\]](#), which seeks to protect and enhance existing opportunities for sport and provide new opportunities for sport and active lifestyles.

Key regional and county plans, policies and programmes

2.17 The key plans and programmes identified at the regional level relate to economic growth and prosperity. For example, the West Midlands Local Industrial Strategy (2019) [See reference 18] seeks to drive growth by strengthening the foundations of productivity in the region. The Greater Birmingham & Solihull Local Enterprise Partnership and the Worcestershire Local Enterprise Partnership both have Strategic Economic Plans [See reference 19] [See reference 20], which set out a vision for economic growth in their respective areas. Both Strategic Economic Plans champion growth and innovation.

2.18 Once adopted, the MLP will set the overall strategy for minerals development in Worcestershire. The MLP seeks to promote sustainable minerals development and to balance the need for minerals development with protection and enhancement of the natural, historic and built environments, and human health. The MLP also seeks to maximise opportunities that the restoration of minerals workings sites can offer in terms of delivering green infrastructure and new habitats.

2.19 Worcestershire has strategies and guidance for sustainable development. The Worcestershire Climate Change Strategy [See reference 21] and Worcestershire Energy Strategy [See reference 22] seek to minimise greenhouse gas emissions and set targets for this. The Green Infrastructure Strategy [See reference 23], Landscape Character Assessment Guidance [See reference 24] and Historic Landscape Characterisation [See reference 25] seek to protect and enhance the natural and historic environment of Worcestershire.

2.20 In addition to Worcestershire-wide documents, each local authority within Worcestershire has, or is preparing a Local Plan, to identify housing and employment development needs and set out a strategy and policies for delivering these. In some areas, these Local Plans are supported by other

development plan documents, relating to specific areas or issues. Minerals development can aid housing and economic development, by providing raw materials for construction, but can also create conflicts in land use. This is discussed further in Appendix B.

2.21 In addition to Worcestershire-specific plans, policies and programmes, Appendix A summarises other documents relevant to the SA and DPD. This includes the Severn River Basin Management Plan (2016) [See reference 26] and River Severn Catchment Flood Management Plan (2009) [See reference 27], which set out how water will be managed in the area, including protection and enhancement of water quality and quantity and management of flood risk. Documents from the Cotswolds AONB Partnership and Malvern Hills AONB Conservation Board are also included, as these set out principles for conserving and enhancing the natural beauty of the AONBs, whilst managing change.

2.22 , The key points emerging from the document review that the Site Allocations DPD may be able to positively influence (either directly or indirectly) are outlined below:

■ Social

- Protecting and enhancing opportunities for sport and recreation, including public rights of way and access to the countryside.
- Improving health and wellbeing and addressing health inequalities.
- Protecting amenity, including minimising the impacts of noise pollution.

■ Environmental

- Conserving and enhancing biodiversity, including achieving biodiversity net gain.
- Achieving wider environmental net gain, including through provision, protection and enhancement of green infrastructure. Enabling access to green infrastructure and promoting linkages in the green infrastructure network are also important in mitigating and adapting to climate change.

- Minimising greenhouse gas emissions, including through sustainable siting of development, encouraging use of more sustainable modes of transport and increasing the use of renewable energy.
- Encouraging and promoting land use activities which will lead to an improvement in the quality of the natural environment, including air and water quality, as well as water quantity.
- Development should be informed by, and sympathetic to, the landscape character of the locality, particularly within, or near to the AONBs.
- Protection and enhancement of the county's natural and cultural heritage, particularly for assets of international and national importance (although all assets should be considered).
- Whilst minerals working and processing is a 'less vulnerable' land use, and therefore development can be appropriate in Flood Zones 1, 2 and 3a, policies should ensure that minerals development does not increase risk of flooding elsewhere.
- Waste should be minimised. The waste hierarchy should be promoted and site waste management plans should be required where appropriate.
- Economic
 - Providing sufficient minerals to meet identified needs, whilst 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 by promoting more sustainable modes of transport.
 - 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.
 - Restoration of sites can provide opportunities for economic growth, especially in leisure and tourism.

Chapter 3

Baseline Information

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

3.2 Schedule 2 of the SEA Regulations requires information to be provided on the following (numbering relates to the specific numbered list in Schedule 2):

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

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

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

3.3 Baseline information was previously collated for the Worcestershire Minerals Local Plan and this has been used as the starting point to collate baseline data for the SA of the Site Allocations DPD. This information has been revised and updated to make use of the most relevant available information sources, and more recent sources, where these are available. The revised and updated baseline data set out in this section reflects the geographical scope and influence of the Site Allocations DPD. This information will be updated as necessary at each stage of the Site Allocations DPD process.

3.4 The baseline information is presented under a number of topic headings, which encompass the required topics set out in the SEA Regulations, as well as additional social and economic topics. Table 3.1 sets out the baseline topics covered in this SA Scoping Report, how these differ from those included in the SA of the MLP, and the reasons for this.

Table 3.1: Baseline topics presented in this SA Scoping Report and how these relate to those presented in the SA of the MLP

Baseline topics in this SA Scoping Report	Equivalent baseline topic in SA of the MLP	Reasons for differences
Landscape	Landscape and Land Use	The 'land use' evidence presented related to new homes built on brownfield land. The DPD will not affect this, so it has been removed and this topic relates solely to landscape.
Biodiversity and Geodiversity	Biodiversity and Geodiversity	No change.
Cultural Heritage, Architecture and Archaeology	Cultural Heritage, Architecture and Archaeology	No change.
Material Assets – including soils and agricultural land and Green Belt	Material Assets – including land use and local amenity	The topic heading has been changed to more accurately describe the baseline data presented in this section.
Natural Resources (including water and air quality)	Natural Resources (water and air quality)	'Including' added for clarity.
Climate Change	Climate Change	No change.
Flooding	Flooding	No change.
Access to Green Space	Access to Services	The SA of the MLP considered public rights of way and access to the countryside under this objective, which are still

Baseline topics in this SA Scoping Report	Equivalent baseline topic in SA of the MLP	Reasons for differences
		considered under 'Access to Green Space'. The SA of the MLP suggested that loss of or disruption to public rights of way could hamper access to services, such as education and health services. However, frequent use of public rights of way to access services and facilities in different settlements (as opposed to just for recreation) is considered unlikely, therefore the DPD is not expected to affect access to services.
Health	Health	No change.
Waste	Waste	No change.
Transport	Transport	No change.
Growth with Prosperity for All	Growth with Prosperity for All	No change.
Population	Population: Demographics, Learning and Skills	The two population topics have been consolidated to focus on the information most likely to be relevant to the DPD. The contents remain similar to the MLP SA topic 'Population: Demographics, Learning and Skills'.
Population	Population: Anti-Social Behaviour and Crime; Litter; Graffiti	The two population topics have been consolidated to focus on the information most likely to be relevant to the DPD. Given the likely remote locations of minerals development, anti-social behaviour, crime, litter and graffiti are considered unlikely to be major issues. In addition, the locations of specific sites and preferred

Baseline topics in this SA Scoping Report	Equivalent baseline topic in SA of the MLP	Reasons for differences
		areas will not affect crime and the fear of crime.
Not included	Energy	The DPD's effects on energy consumption will be limited, as it will not include policies on sustainable construction (these are included in the MLP). The primary effect of the DPD in terms of energy will be through transportation, which is addressed under the Climate Change and Transport topics.
Not included	Provision of Housing	Whilst minerals development supplies the raw materials for housing, the DPD will not have a direct effect on housing provision. Production of aggregates is considered under 'Natural Resources'.
Not included	Participation by All/Responsibility	Whilst participation is an important part of the DPD and SA processes, this is largely a procedural matter. It is not considered necessary or useful for the purposes of SA to present information on participation on other planning documents (as was included in the MLP SA).
Not included	Technology, Innovation and Inward Investment	The SA of the MLP included baseline information on the number of businesses in Worcestershire. While minerals development provides opportunities for relevant businesses, the DPD is not expected to affect the number of businesses in Worcestershire. The role of the DPD is to allocate specific sites and preferred areas, within the

Baseline topics in this SA Scoping Report	Equivalent baseline topic in SA of the MLP	Reasons for differences
		context of the spatial strategy set by the Minerals Local Plan.

3.5 For each topic, the following sections set out an overview of key data related to that topic (split into sub-topics, where relevant), followed by a summary of the likely evolution of the baseline if the DPD were not in place (the ‘likely evolution without the plan’ requirement of the SEA Regulations) and then a summary of the role of the Site Allocations DPD in relation to that topic.

3.6 Analysis of the baseline information sought to identify trends over time, where possible, and has enabled a number of key sustainability issues facing Worcestershire to be identified. These are presented at the end of this chapter.

Landscape

Landscape: Baseline

Landscape character and types

3.7 Landscape character is defined as the distinct, recognisable and consistent pattern of elements in the landscape. Many elements contribute to landscape, from the underlying geology, which defines the structure of the landscape, soil types and habitats, to the influence of human settlement and management over time. This section focuses on landscape character areas and types defined by Natural England and Worcestershire’s Landscape Character Assessment **[See reference 28]**. In order to avoid repetition, important habitats in Worcestershire, including woodland, are discussed in the Biodiversity and Geodiversity section. In addition, a Historic Landscape Characterisation has been carried out for Worcestershire, which aims to improve our understanding of the County’s

landscape from a historic environment perspective, and provide a context for its archaeological sites and monuments. The Historic Landscape Characterisation is discussed in the Historic Environment section.

3.8 Worcestershire contains the following National Character Areas (NCAs):

- Severn and Avon Vales (NCA Profile 106 [\[See reference 29\]](#)).
- Arden (NCA Profile 97 [\[See reference 30\]](#)).
- Malvern Hills (NCA Profile 103 [\[See reference 31\]](#)).
- Mid Severn Sandstone Plateau (NCA Profile 66 [\[See reference 32\]](#)).
- Teme Valley (NCA Profile 102 [\[See reference 33\]](#)).
- Herefordshire Plateau (NCA Profile 101 [\[See reference 34\]](#)).
- Cotswolds (NCA Profile 107 [\[See reference 35\]](#)).

3.9 NCAs give a high-level description of landscape that is used to inform Local Plan strategies and policies and as evidence in response to Sustainability Appraisal consultations for Local Plans, Landscape and Visual Impacts Assessments and to inform local Landscape Character assessments. The latest National Character Area profiles [\[See reference 36\]](#), produced by Natural England in 2014, outline key landscape changes that have occurred within NCAs and provides analysis of the landscape opportunities and ecosystems services these NCAs provide.

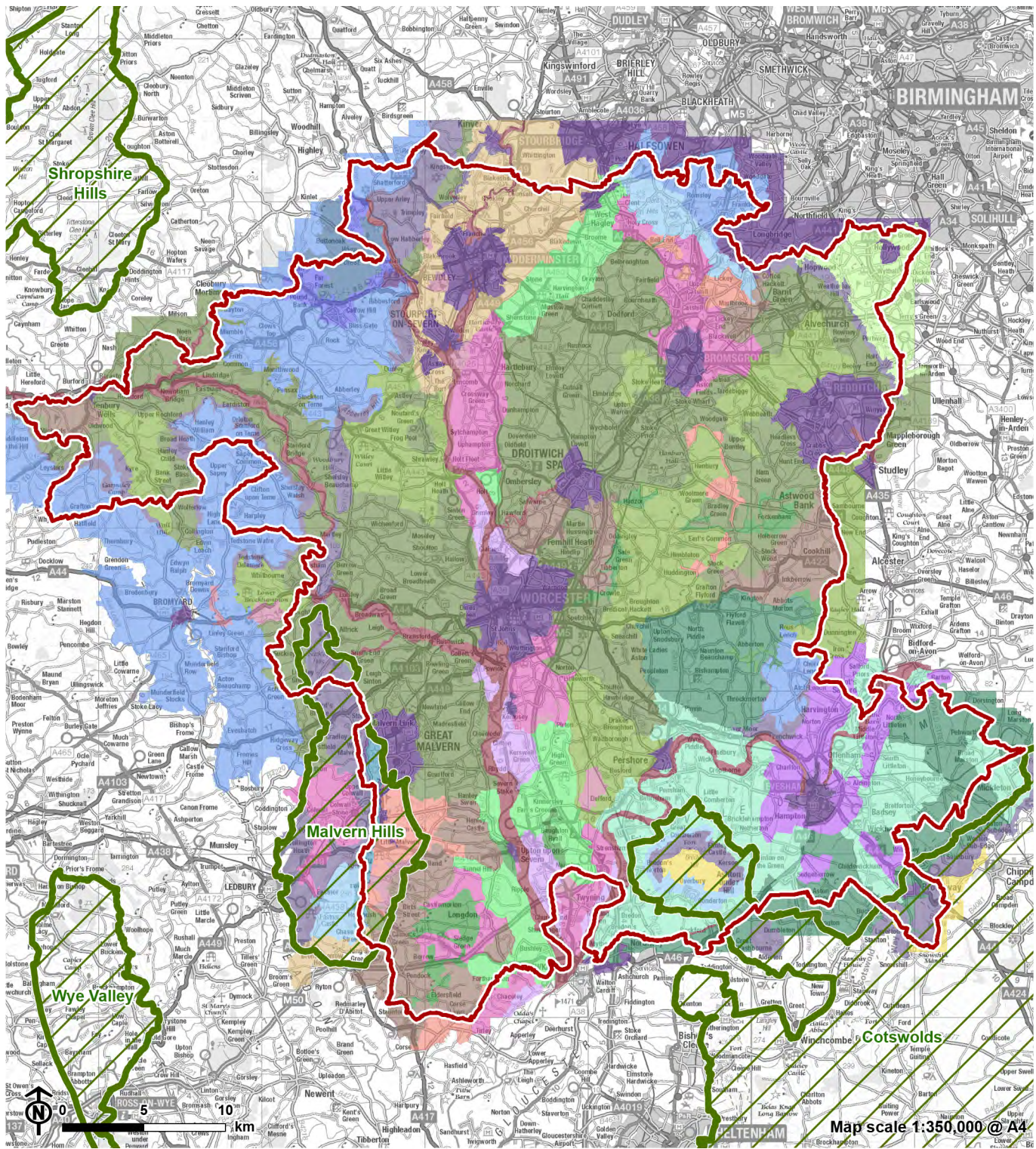
3.10 A comprehensive landscape character assessment has been undertaken in Worcestershire [\[See reference 37\]](#). Landscape character assessment places the features of a particular landscape in context, providing not just a description of the different landscapes within the county, but an understanding as to why those differences and different landscapes are there and what they represent.

3.11 There are 23 Landscape Types identified in Worcestershire, as shown in Figure 3.1, and they are described as: High Hills and Slopes; Principal Wooded Hills; Wooded Hills and Farmlands; Wooded Forest; Forest Smallholdings and Dwellings; Timbered Pastures; Principal Timbered Farmlands; Timbered

Chapter 3 Baseline Information

Plateau Farmlands; Wooded Estatelands; Limestone Estatelands; Sandstone Estatelands; Enclosed Commons; Estate Farmlands; Principal Settled Farmlands; Settled Farmlands with Pastoral Land Use; Settled Farmlands on River Terraces; Principal Village Farmlands; Village Farmlands with Orchards; Village Claylands; Riverside Meadows; Wet Pasture Meadows; and Unenclosed Commons. Note the 'Urban' Landscape Type is not shown in Figure 3.1.

3.12 Each of the above Landscape Types is made up of a number of smaller Landscape Description Units (LDUs). These LDUs, in turn, comprise many smaller-scale Land Cover Parcels (LCPs). LCPs have formed the basis of an assessment of the quality of the county's landscape and the following is recorded for each: condition, sensitivity, resilience and current contribution towards Green Infrastructure (GI) networks.



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Figure 3.1: Landscape Types in Worcestershire

CB:KS EB:Bean_C LUC FIG3_1_11159_r1_Landscape_Types_A4P_23/10/2020
 Source: OS, Worcestershire County Council, Natural England

- | | | |
|------------------------------------|--|---------------------------------|
| Worcestershire County | Principal Settled Farmlands | Timbered Plateau Farmlands |
| Area of Outstanding Natural Beauty | Principal Timbered Farmlands | Unenclosed Commons |
| Land cover | Principal Village Farmlands | Urban |
| Enclosed Commons | Principal Wooded Hills | Village Claylands |
| Estate Farmlands | Riverside Meadows | Village Farmlands with Orchards |
| Forest Smallholdings and Dwellings | Sandstone Estatelands | Wet Pasture Meadows |
| High Hills and Slopes | Settled Farmlands on River Terrace | Wooded Estatelands |
| Limestone Estatelands | Settled Farmlands with Pastoral Land Use | Wooded Forest |
| | Timbered Pastures | Wooded Hills and Farmlands |

3.13 In the baseline year (2005 aerial photograph set, assessed 2008) the percentage of landscape units (LCPs) in 'good' condition was 69%, 'moderate' was 27%, and 'poor' condition was 4%. The indicator excludes urban areas. This means that the current status of the landscape character in Worcestershire is good. Expert interpretation of the baseline data by landscape officers has confirmed that Worcestershire's landscape is in good condition [\[See reference 38\]](#). It has not been possible to update this indicator as of April 2021.

Areas of Outstanding Natural Beauty

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

3.15 The Cotswolds AONB Landscape and Visual Sensitivity Study (May 2019) [\[See reference 39\]](#) and Malvern Hills AONB Landscape and Visual Sensitivity Study (May 2019) [\[See reference 40\]](#) identified the landscape and visual sensitivity of land within and adjacent to these protected landscapes in order to assess their capacity to accommodate employment, housing or leisure development. For the Cotswold AONB, the study suggests that visibility extends a large distance from the AONB and that 4.5km from Bredon Hill's viewpoints equates to a reasonable area for consideration of the setting of the hill in terms of potential new development in the area. However, it is also suggested that the impact of larger development types on setting may need to be considered beyond 4.5km. Similarly, the views from the Malvern Hills AONB extend a significant distance, with Bredon Hill being visible on the other side of the Severn Vale. It is identified that a 5km distance from the ridge top forms the boundary for consideration of effects on the AONB setting for larger commercial buildings or large blocks of housing development.

3.16 The State of the Cotswolds report (2017) [\[See reference 41\]](#) includes a large number of indicators to monitor the landscape, environment and characteristics of the AONB. The report introduced the indicator 'changes to landscape character identified through fixed point photography' – the 2017

report is the first use of this indicator and serves as a baseline, therefore changes and trends cannot be identified until repeat surveys are undertaken. The report found that there was an overall increase in the area of woodland in the AONB between 2012 and 2016 (375ha or 2%) and as of 2015, 204,109ha (61% of the AONB and 81% of the estimated Utilisable Agricultural Area) was under agri-environment management schemes designed to encourage farmers and landowners to manage their land in an environmentally sensitive way. The 2018 State of the Malvern Hills report [See reference 42] found that overall there has been a negative trend in the landscape's condition between 2014 and 2018, with 40% of Landscape Description Units showing signs of deterioration and only 13% showing improvement (based on fixed-point photographic monitoring points at each LDU, with 30 LDUs in total). However, it is noted that the positive and negative changes occurring to the AONB landscape during the monitoring period have been small. Additionally, as of 2018, 48.7% less of the Malvern Hills AONB was being managed under agri-environment schemes when compared to 2013.

Landscape: Likely evolution without the plan

3.17 The likely evolution of the landscape is dependent on a wide range of factors, including development planning and development control decision-making. Specific minerals development proposals could undermine landscape quality through eroding character if designs fail to respond to their landscape context in a sensitive manner through scale, massing, etc. If trends continue within the Cotswolds AONB regarding woodland coverage and appropriate land management, environmental quality is likely to continue to increase. If trends continue in the Malvern Hills AONB, in terms of general condition deterioration and a lack of appropriate land management, the landscape quality may continue to decline.

3.18 MLP Policy MLP 23: Landscape requires any development proposals to protect conserve and enhance the character and distinctiveness of the landscape. This includes the preparation of a Landscape and Visual Impact Assessment (LVIA), which must include options for mitigation and restoration

that are informed by measures also set out in Strategic Policy MLP 3: Green Infrastructure.

3.19 MLP Policy MLP 8: Salwarpe Tributaries Strategic Corridor includes a requirement to protect, restore and link relic ancient woodlands and conserve and restore tree cover along watercourses and streamlines. Additionally, Policy MLP 21 (Biodiversity) provides overarching protection for woodland in Worcestershire through a requirement that mineral development must not result in the loss or deterioration of ancient woodland and ancient or veteran trees.

Landscape: Role of Site Allocations DPD

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

3.21 A wide range of support, guidance, and self-administered online checklists exist to ensure that landscape can be fully considered in development proposals from the earliest stage. The Site Allocations DPD could help to ensure the benefits afforded by these resources are maximised by signposting to the data/toolkits, and ensuring landscape considerations are fully integrated into proposals.

Biodiversity and Geodiversity

Biodiversity and Geodiversity: Baseline

Designated sites

3.22 There are a number of designated biodiversity and geodiversity sites in the plan area. Nationally designated sites are shown in Figure 3.2 and locally designated sites are shown in Figure 3.3.

European sites

3.23 European sites were classified under European Union (EU) legislation but, since the end of the Brexit transition period from 1st January 2021, are protected in the UK by the Habitats Regulations 2017 [See reference 43] (as amended), and now form part of the 'national site network'. European sites include Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and sites that have started going through the formal designation process for these. Ramsar sites are also included in consideration of 'European sites', although they are designated at the international level, via the Ramsar Convention (1971). A summary of European sites in and around Worcestershire by the primary type of habitat they support is included below [See reference 44].

Ponds and Pools

3.24 Lyppard Grange Ponds SAC lies within Worcester, and Fen Pools SAC lies north of the Worcestershire boundary. Both are aquatic sites, designated for their Great Crested Newt population. The key sensitivities of these sites relate to water quality and quantity, including eutrophication, siltation and diffuse air pollution. These sites also require the habitat surrounding water bodies to be

appropriately maintained, including managing shrub and tree encroachment and an appropriate grazing regime. The spread of non-native species, recreational pressure and development pressure are identified as risks to the integrity of the sites.

Woodland

3.25 Bredon Hill SAC is located in the south of Worcestershire and Dixon Wood SAC is located to the south of Worcestershire, within Gloucestershire. These are both woodland sites, designated for their populations of the violet click beetle. Downton Gorge SAC is located to the northwest within Herefordshire. Downton Gorge is a largely woodland site (also contains some inland water bodies) that is designated for its 'Tilio-Acerion' forests of slopes, screes and ravines. The key sensitivities of these sites are related to water quality, water levels, animal grazing maintenance, recreational pressure, non-native/invasive species scrub encroachment, atmospheric pollution (nutrient deposition and acidification), development pressure, climate change, disease and insufficient forestry and woodland management.

Rivers

3.26 The River Wye SAC lies to the west of Worcestershire, within Herefordshire and the Severn Estuary SAC is located to the southwest, within Gloucestershire. The River Wye SAC is designated for its river habitat, fish and otter populations. The Severn Estuary SAC is designated for its estuarine and mudflat habitats, as well as its fish populations. The integrity of these sites is threatened by water pollution (agricultural run-off and sewage output), changes in the flow regime, increased turbidity/siltation, inappropriate dredging, recreational pressures, atmospheric pollution (nutrient deposition and acidification), climate change, illegal fish poaching, non-native/invasive species, development pressures and artificial barriers to fish migration.

Wet Grassland

3.27 Walmore Common SPA and Ramsar site is located to the southwest of Worcestershire within Gloucestershire. It is a grassland site that is designated for its bird population. The key sensitivities to the integrity of this site are maintenance of appropriate grazing regimes, maintenance of the hydrological regime, water quality (nutrient enrichment from agricultural run-off and wastewater discharge), scrub encroachment (often as a result of undergrazing), development pressures, non-native/invasive species, human disturbance (vehicles, arson and vandalism) and atmospheric pollution.

Estuarine Habitats

3.28 The Severn Estuary SAC/SPA/Ramsar site is located to the southwest of Worcestershire. The Severn Estuary/SPA/Ramsar is an aquatic site designated for its estuarine and mudflat habitats as well as its fish and bird populations. The integrity of the site's habitat is threatened by water pollution, recreational/tourism pressures, development (dock/harbour creation, coastal defence works, energy production), erosion, siltation, dredging, over-fishing, maintenance of appropriate grazing regime, spread of non-native/invasive species, disturbance to bird feeding and roosting areas (noise/visual) and changes in land management.

Sites of Special Scientific Interest (SSSIs)

3.29 There is a total of 112 SSSIs within Worcestershire, covering 4,859ha. All SSSIs in England are divided into units, which are typically different areas of habitat and/or land ownership. The SSSIs within Worcestershire are separated into 294 units covering 3,535ha. Whilst most SSSIs in Worcestershire are designated for their biological interest, five are designated for both biological and geological interest (including the Malvern Hills SSSI), and 10 are designated solely for their geological interest. Some of those designated for

their geological interest are sites previously used for minerals extraction, including:

- Beckford Gravel Pit.
- Sling Gravel Pits.
- Woodbury Quarry.

3.30 The proportion of SSSIs meeting either ‘favourable’ or ‘unfavourable recovering’ condition tends to fluctuate year on year, but has increased in recent years. In each of the years 2013, 2014 and 2015, the proportion of SSSIs meeting either ‘favourable’ or ‘unfavourable recovering’ condition was around 92-93%. In 2018, 2019 and 2020, a higher proportion of SSSIs (around 95%) were in either ‘favourable’ or ‘unfavourable recovering’ condition. The latest figures from 2021 show 93.2% of selected sites meeting these standards [See reference 45]. The condition of SSSIs within Worcestershire is summarised in Table 3.2 below.

Table 3.2: Condition of SSSIs in Worcestershire

Condition at April 2021	Area of assessed units (ha)	Proportion of assessed units
Favourable	1,826	51.67%
Unfavourable recovering	1,469	41.57%
Unfavourable no change	89	2.52%
Unfavourable declining	144	4.07%
Partially destroyed	3	0.1%
Destroyed	3	0.08%

3.31 A high-level analysis of Worcestershire's neighbouring areas demonstrates that the proportion of SSSIs in 'favourable' or 'unfavourable recovering'

condition in Worcestershire is better than the overall average across the wider area. This is summarised in Table 3.3 below.

Table 3.3: SSSIs in favourable or unfavourable recovering status in Worcestershire and the surrounding area

Area	Total area of SSSIs units assessed (ha)	Area of assessed SSSI units in 'favourable' or 'unfavourable recovering' condition (ha)	Proportion of SSSIs assessed units in 'favourable' or 'unfavourable recovering' condition
Gloucestershire	13,074	12,379	94.7%
Herefordshire	5,014	3,875	77.3%
Shropshire	7,269	6,960	95.75%
Staffordshire	8,514	7,298	85.72%
Warwickshire	1,351	1,328	98.23%
Worcestershire	3,534	3,296	93.24. %
West Midlands	22,755	19,681	86.49%

3.32 'Unfavourable recovering' status means that such SSSIs do not meet the standard to be classed as 'favourable', but are under management regimes that should allow this status to be reached in time (Natural England does not specify a timeframe for this). This condition can deteriorate if the recovery work is not sustained.

Local sites

3.33 The Worcestershire Local Sites Partnership comprises the seven local authorities, Worcestershire Wildlife Trust, Earth Heritage Trust, Worcestershire

Biological Records Centre, Natural England, Forestry Commission, Environment Agency, Kemerton Conservation Trust, Farming and Wildlife Advisory Group, Country Land and Business Association and the National Farmers Union. The Partnership currently meets twice a year [See reference 46].

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

3.35 In the past the Partnership has monitored the proportion of Local Sites where positive conservation management is being implemented. Positive conservation management is management that contributes to maintaining or enhancing the features of interest for which a site has been selected. During this monitoring, the Partnership has not measured the actual condition of local sites (Local Wildlife Sites (LWS) and Local Geological Sites (LGS)), but rather assessed which of the sites were under management regimes appropriate for the retention of site designation. It can be reasonably inferred that a site under a favourable management regime will be in better condition than one that is not (although there will be isolated exceptions to this). The management of LWS' is key to achieving biodiversity targets [See reference 47].

3.36 In Worcestershire, the most recent data shows that 47% of all local sites were rated as being under positive management during 2018/19. This is an increase in the proportion of sites under positive management from 31% in 2009/10.

3.37 The Publication Version MLP states that there are now over 560 Local Wildlife Sites in the county, which collectively cover approximately 5% of the County. The Publication Version MLP also states that there are more than 90 Local Geological Sites in Worcestershire. Table 3.4 sets out the distribution of LWS' and LGS' across Worcestershire.

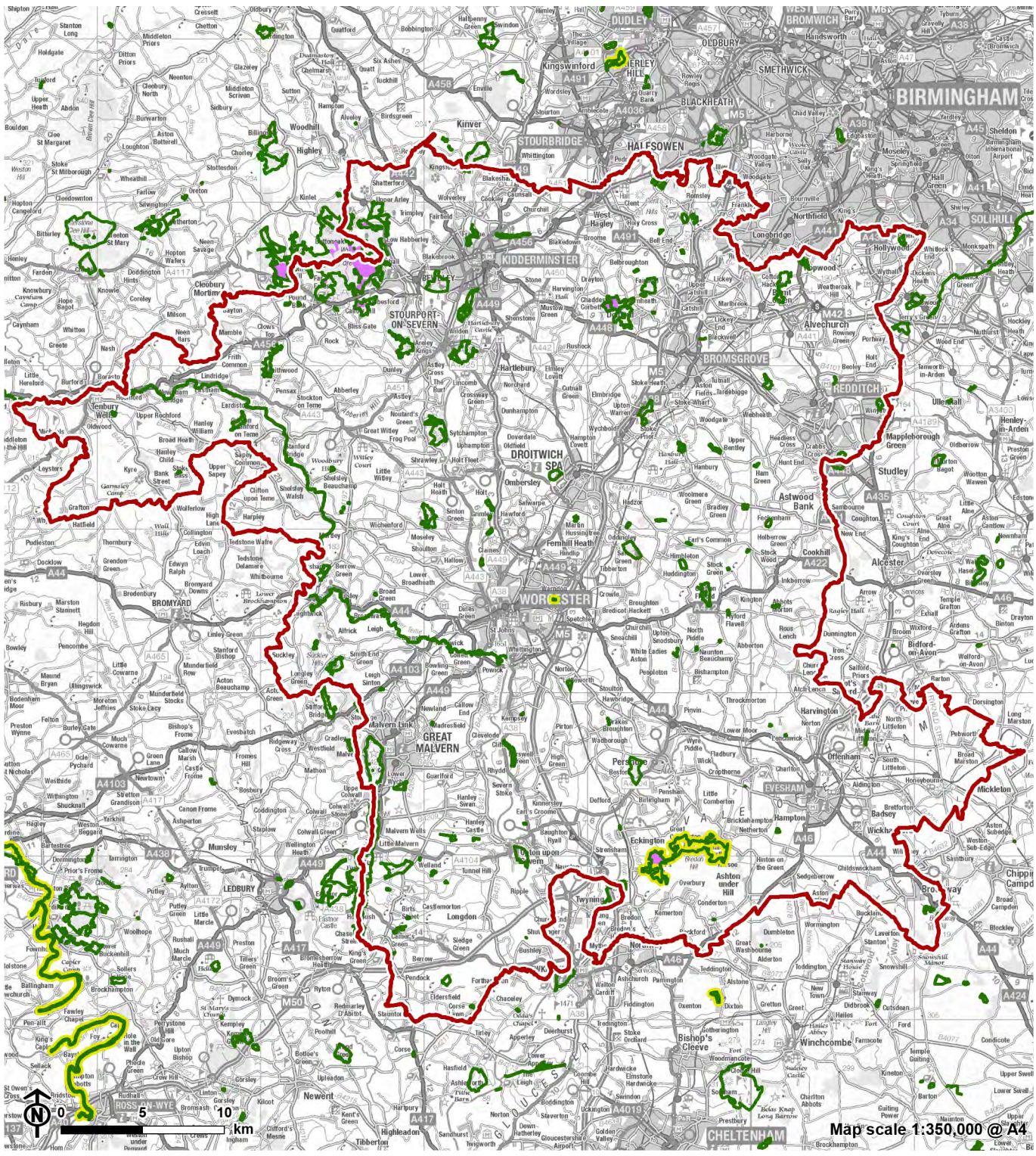
Table 3.4: Distribution of LWS' and LGS' in Worcestershire

Local authority area	Total number of LWS	Total number of LGS
Bromsgrove	33	0
Malvern Hills	227	66
Redditch	29	0
Worcester City	12	0
Wychavon	162	16
Wyre Forest	58	8

Biodiversity Action Plan

3.38 As part of the Worcestershire Biodiversity Action Plan, Biodiversity Delivery Areas have been developed by the Worcestershire Biodiversity Partnership in 2011. The following areas are included in Figure 3.3 and have been selected due to having the greatest potential to deliver BAP targets for both species and habitats:

- Bow Brook;
- Wyre Forest Acid Grassland and Heaths;
- Forest of Feckenham;
- Malvern Chase and Laugherne Valley; and
- Severn and Avon Vales.

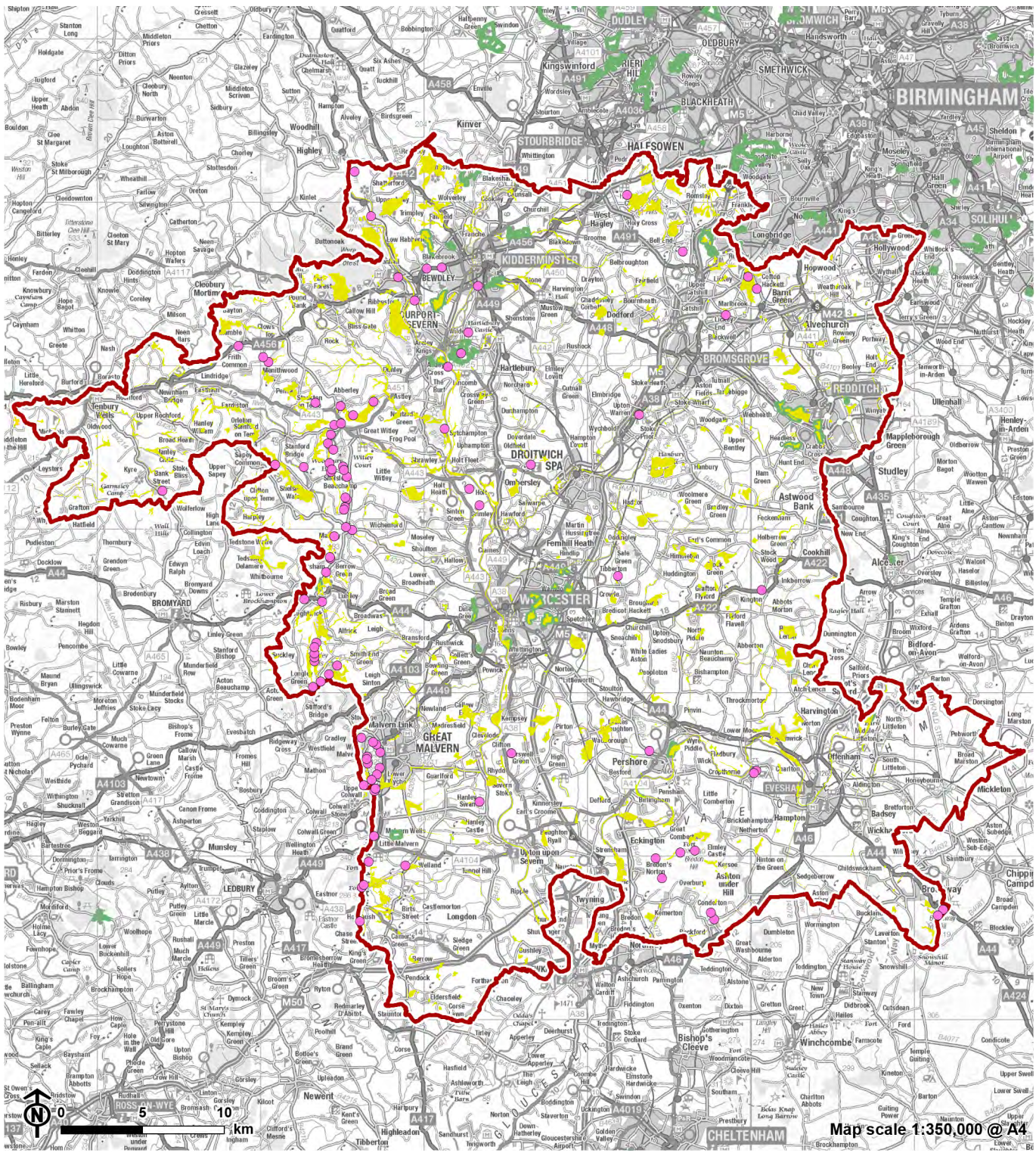


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 Source: OS, Natural England

Figure 3.2: Nationally and Internationally Designated Biodiversity and Geodiversity Sites in Worcestershire

- Worcestershire County
- Special Area of Conservation
- Site of Special Scientific Interest
- National Nature Reserve



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CB:KS EB:Bean_C LUC FIG3_3_11159_r1_Local_Bio_Designations_A4P_23/10/2020
 Source: OS, Worcestershire County Council, Natural England

Figure 3.3: Locally Designated Biodiversity and Geodiversity Sites in Worcestershire

- Worcestershire County
- Local Nature Reserve
- Local Wildlife Site
- Local Geological Site

Woodland

3.39 Britain is one of the least wooded countries in Europe, with around 13% coverage of tree cover [See reference 48]. Worcestershire as a county is slightly below the national average for woodland cover. Fragmentation has been a major problem, with over half of ancient woodlands within the County being smaller than five hectares and only five being over 100 hectares [See reference 49]. Much of what remains is in the northwest of the county, focused on the Wyre Forest. The woodlands of Worcestershire can be grouped into the following categories based on origin:

- Ancient Woodland Sites (AWS) – Woods that have been continuously wooded since at least 1600:
 - Ancient Semi-Natural Woodland (ASNW); and
 - Plantations on Ancient Woodland Sites (PAWS).
- Recent or maturing secondary woodland including:
 - Other Semi Natural Woodland (OSNW);
 - Recent secondary woodland;
 - Broadleaved plantations;
 - Mixed woodland plantation; and
 - Coniferous plantation.

3.40 Traditional ways of managing woodlands, such as coppicing, declined significantly as demand for wood for tools and crafts fell. As a result, many woodlands have either been left unmanaged or managed for mature timber. Coppicing management creates bare ground in the first two years, which allows in plenty of sunlight creating a profusion of wildflowers that form habitats for butterflies. A more developed coppice provides valuable nesting habitats for woodland birds. The decline in coppicing has led to structural change within woods, a lack of trees at different stages of growth and therefore limited habitat diversity to support a well-balanced woodland fauna and flora [See reference 50]. Past data from 2012 notes that many woodlands in Worcestershire are

currently unmanaged, under-utilised, neglected and damaged. Only 3.6% of the county area is ancient woodland, with 2.5% ASNW and 1.1% replanted [See reference 51].

3.41 To improve habitat connectivity between the patches of ancient woodland and ASNW in the county, Worcestershire Wildlife Trust and Worcestershire County Council have established projects such as Natural Networks. This project aims to provide ‘stepping stones’ of habitat between existing patches to improve movement of woodland species between areas [See reference 52].

3.42 Conservation objectives for PAWS, from the Worcestershire Biodiversity Action Plan (2018-2027), include ‘restoration of PAWS woodland to a more semi-natural vegetative cover’ and ‘take opportunities to re-link fragmented PAWS and ancient woodland sites.’ The Worcestershire Woodland Habitat Action Plan (2018) [See reference 53] identifies the following as current factors affecting woodland habitats in the county:

- Bark stripping by deer and grey squirrels;
- Invasion of semi-natural woodland by non-native plant species;
- Tree diseases;
- Scrub management;
- Surrounding land uses;
- Air pollution;
- Fly-tipping;
- Economic considerations – PAWS restoration may not be a priority;
- Use of heavy machinery in forestry operations;
- Excessive recreational use; and
- Fragmentation of woodland due to development.

3.43 Minerals development is unlikely to affect many of these, but could lead to direct loss of woodland, including ancient woodland, and woodland creation through restoration.

3.44 Government has given the Wyre Forest high priority for PAWS restoration and therefore a strategy and 50 year vision [See reference 54] has been put in place by the Wyre Forest Landscape Partnership to encourage recognition of the Forest as one of England's most important ancient woodlands that will adapt to a changing climate. The strategy includes targets for 2025 based on sustainable woodland management in the context of climate adaptation and enhancing the strategic connectivity of the Forest.

Breeding bird populations

3.45 The Breeding Bird Survey (BBS) is provided by the British Trust for Ornithology (BTO), the Joint Nature Conservation Committee (JNCC) and Royal Society for the Protection of Birds (RSPB). The survey provides evidence on population trends for the majority of UK breeding species of birds. No recent county-level data is available and therefore the trends from the West Midlands 2019 BBS survey, which includes Worcestershire, are presented below [See reference 55].

3.46 For the period 2013-2018, out of the 57 bird species included in the survey six species (Jackdaw, Blackcap, Goldcrest, Wren, Robin and Goldfinch) saw a statistically significant increase in population. During the same period, eight of 57 species included in the survey saw a statistically significant decline in population. Out of these, population decline was the most significant in Greenfinch species where a 41% reduction was observed. The recorded decline of greenfinch is likely to be due to a disease called trichomonosis [See reference 56].

3.47 In the longer term (1995-2018), 12 of the 57 bird species surveys saw a statistically significant population decline. The most significant among these is Cuckoo and Starling, which saw a 78% and 70% reduction in population. This is

reflective of a nationwide decline in these species. The reason for cuckoo decline is not known, but may be related to declines in prey availability in the breeding season or deterioration of conditions along migration routes or at over-wintering grounds [See reference 57]. The cause of starling decline is also unknown, although this could be related to a decline in availability of soil invertebrates, due to land use change, agricultural practices and/or drier summers [See reference 58]. In terms of increases, twelve of the 57 species included in the survey saw a statistically significant increase in population between 1995 and 2018. The most significant overall increase observed during this period was in the Goldfinch population where a 238% increase was observed. This is thought to be a result of garden bird feeding, including an increased variety of feed, reflecting a nationwide trend [See reference 59].

Biodiversity and Geodiversity: Likely evolution without the plan

3.48 Existing planning controls will ensure that inappropriate development does not threaten the integrity of European sites in the majority of cases (in exceptional circumstances, imperative reasons of overriding public interest may be applicable). However, European sites declining in condition will continue to do so without further policy intervention.

3.49 The condition of SSSIs has generally increased over recent years. However, changes to the Common Agricultural Policy and other funding schemes (following Brexit) could lead to further changes in SSSI condition, but this is uncertain.

3.50 The proportion of local sites under appropriate management has increased in recent years, which may lead to improvement of condition of local sites if this is maintained.

3.51 There have been some substantial longer-term increases and declines in birds in the West Midlands. These patterns generally follow national trends,

such as the decline in Greenfinch due to disease and increase in Goldfinch, likely to be related to garden feeding.

3.52 Conservation objectives in the Woodland Habitat Action Plan, as part of the Biodiversity Action Plan for Worcestershire, include restoration of PAWS woodlands, maximising opportunities to re-link fragmented PAWS and ancient woodland sites and increasing overall woodland cover. As such, there is potential for ancient woodland to be largely protected and woodland cover to increase in the absence of the DPD. However, this will depend on the appropriate implementation of measures outlined in the Biodiversity Action Plan, which will require continued political commitment, funding and monitoring of progress.

3.53 MLP Policy **MLP 21: Biodiversity** aims to support the conservation objectives of European Sites in and around Worcestershire through the requirement that mineral development must not adversely affect the integrity of European sites. The policy will also help to ensure that recent trends in improved condition of SSSIs are continued by requiring that minerals development is not likely to have adverse effects on SSSIs (unless it can be demonstrated the benefits of development outweigh the impacts on the SSSI and the wider network of SSSIs). The same requirements are applied to Local Wildlife Sites through the policy. The policy will also support bird populations through the requirements that mineral development should conserve, restore and enhance ecological networks as well as delivering net gains in biodiversity.

Biodiversity and Geodiversity: Role of Site Allocations DPD

3.54 The extraction and movement of minerals has the potential to impact negatively on European sites. The Site Allocations DPD can help to ensure that no significant effects arise from minerals operations through sensitive siting of minerals development and providing requirements for operation, including the safeguarding of European sites. A Habitats Regulations Assessment (HRA) Record of Assessment (May 2019) concluded that the Fourth Stage MLP is not

expected to lead to likely significant effects on International Sites either alone or in combination with those arising from another plan or project. However, the MLP HRA also noted that an HRA will be required for the Mineral Site Allocations Plan and states that, "this Assessment does not remove the need for later Habitats Regulations Assessment of subservient plans, projects, or permissions associated with, or arising out of the MLP; acceptance that the MLP is consistent, so far as can be ascertained, with the Habitats Regulations does not guarantee that any plan or project derived from the Plan will also be found consistent". The SA of the Site Allocations DPD will take into consideration the results of the Site Allocations DPD HRA when assessing likely impacts on biodiversity.

3.55 Through guiding development to help conserve and enhance SSSIs, the Site Allocations DPD can contribute to biodiversity goals. Indeed, a report on the impact of mining and quarrying [See reference 60] states that despite its poor record in the past, the industry now makes an overall positive contribution to biodiversity and geodiversity which is disproportionate to its land take. This is illustrated by the large number of SSSIs and Natura 2000 sites linked to past and current mineral extraction. Opportunities afforded by site restoration should seek to maximise biodiversity and where appropriate create or enhance features of geodiversity importance.

3.56 Through requiring development proposals to take account of local biodiversity and geodiversity sites, the Site Allocations DPD could seek to protect and conserve these assets as well ensuring developments deliver biodiversity net gains. The location of minerals sites can also be guided to help minimise disturbance to these sites. The Site Allocations DPD could have a positive impact on geodiversity by opening up new sites which could ultimately become additional LGS'. Policies could also make provision for both designated and non-designated geodiversity to be opened up for educational and recreational benefit where appropriate, to form a lasting legacy of value to naturalists and the wider public. The opportunities afforded by site restoration should seek to maximise biodiversity.

The Site Allocations DPD can also play a role in conserving non-designated habitats and species, as well as biodiversity in general, by directing

development away from more sensitive areas. In addition, restoration of minerals sites presents opportunities to enhance biodiversity.

Cultural Heritage, Architecture and Archaeology

Cultural Heritage, Architecture and Archaeology: Baseline

Historic Landscape Characterisation

3.57 The Worcestershire Historic Landscape Characterisation [See reference 61] sought to characterise the historic landscape of Worcestershire to improve understanding of the landscape and provide a context for Worcestershire's archaeology and monuments. This found that 50% of Worcestershire's entire land area has undergone some kind of landscape character change since 1945. Of that 50%, nearly 27% results from the amalgamation of fields by means of hedgerow removal, presumably as part of post-war industrialisation of agricultural practices. Another 4% represents the reorganisation of fields and destruction of character, mainly as a result of the construction of three motorways and several dual carriageways through the county. In addition, the enclosure of large tracts of formerly open heaths, lowland moors, commons and wetlands in the early 19th century, which at that time made up over 22% of the county, represents a major change to the county's historic landscape character.

3.58 However, the historic value of landscapes is not solely defined by the level of change they have undergone, it is also influenced by rarity and the relationship of the landscape with other historic environment assets. In addition, some landscapes are more 'dynamic' and have undergone greater levels of change. The HLC work carried out by WCC identified valued characteristics of

the county's landscapes so that they can be effectively managed into the future to provide benefits for residents and visitors.

Designated heritage assets

3.59 As shown in Figure 3.4, there are a number of nationally designated heritage assets throughout the plan area. This includes over 7,000 listed buildings, 174 Scheduled Monuments, 135 Conservation Areas and 17 Nationally Registered Historic Park and Gardens [See reference 62]. In the north and south east of the county, listed buildings tend to be concentrated in the towns and villages but there is a greater distribution of listed buildings in more rural areas in other parts of the county, which arises from the disparities in nucleated and dispersed development layouts. The vast majority of Worcestershire's historic settlements originated between the 8th and the 13th centuries, from which they gradually developed their 19th century form. Many retain late medieval and post-medieval historic building stocks [See reference 63]. There are some conservation areas that cover large areas due to their linear nature, such as the Staffordshire and Worcestershire Canal Conservation Area and the Worcestershire and Birmingham Canal Conservation Area.

3.60 Figure 3.5 shows the location of locally important parks and gardens in Worcestershire. These heritage assets are not nationally designated, but are recognised as being locally important. The contribution of local heritage assets is highlighted in the NPPF and requires that effects of development on non-designated heritage assets should be considered in determining planning applications.

Heritage assets at risk in Worcestershire

3.61 A total of 49 designated heritage assets, including listed buildings and scheduled ancient monuments, were considered to be 'at risk' in Worcestershire in 2019.

3.62 The annual totals of heritage assets at risk in Worcestershire and within the region are summarised in Table 3.5. Table 3.6 displays heritage assets at risk within in Worcestershire by type. In Worcestershire, in 2020, there were 23 Grade I and II* listed buildings at risk. As of 2020, there were 16 Scheduled Monuments and three Registered Parks and Gardens at risk. The total number of designated heritage assets at risk in Worcestershire has fluctuated from 44 in 2012 to 49 as of 2020. The current total of heritage assets at risk is a reduction from the 2015 total of 56. The fluctuating total of heritage assets at risk is in contrast to the West Midlands as a whole which has seen a steady decline since 2009.

3.63 Nationally, Historic England data shows that the percentage of Grade I and II* buildings at risk in 2020 was 3.4%, a decrease from 4.1% in 2013. The percentage of scheduled monuments at risk (based on archaeology risk assessment methodology) in 2020 was 10.5% (a decrease from 16.5% in 2013). The percentage of registered parks and gardens at risk in 2020 was 6.2%, matching the 6.2% in 2013.

Table 3.5: Number of designated heritage assets 'at risk'

Area	2012	2013	2014	2015	2016	2017	2018	2019	2020*
Bromsgrove	10	10	10	9	8	7	7	7	7
Malvern Hills	7	6	11	15	12	13	12	12	11
Redditch	0	0	1	1	2	2	2	2	2
Worcester City	6	6	4	4	4	4	4	4	4
Wychavon	18	18	23	24	20	17	17	17	16
Wyre Forest	3	3	3	3	3	6	7	7	8
Worcestershire	44	43	52	56	49	49	49	49	49
West Midlands	443	424	436	450	430	416	410	-	-
Midlands	-	-	-	-	-	-	-	889	901

*Collection of 2020 data has been affected by Covid-19, with less on-site checking of entries being possible during 'lockdown' periods [\[See reference 64\]](#).

Table 3.6: Breakdown of designated heritage assets ‘at risk’, 2020

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

*Please note that the number of assets in this table do not add up to the number in the previous table (Table 3.8) because some of the heritage assets are considered in more than one listing.

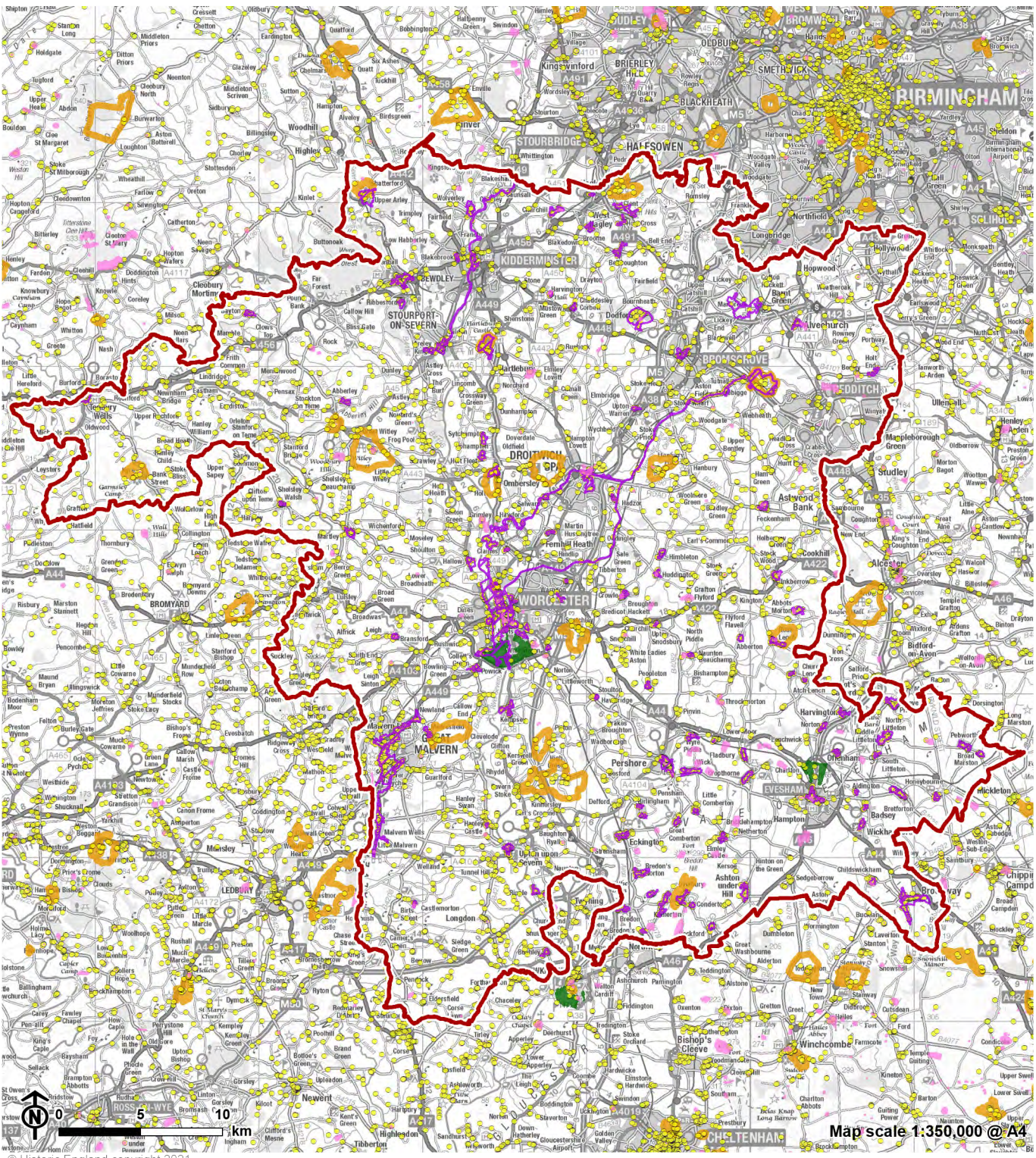
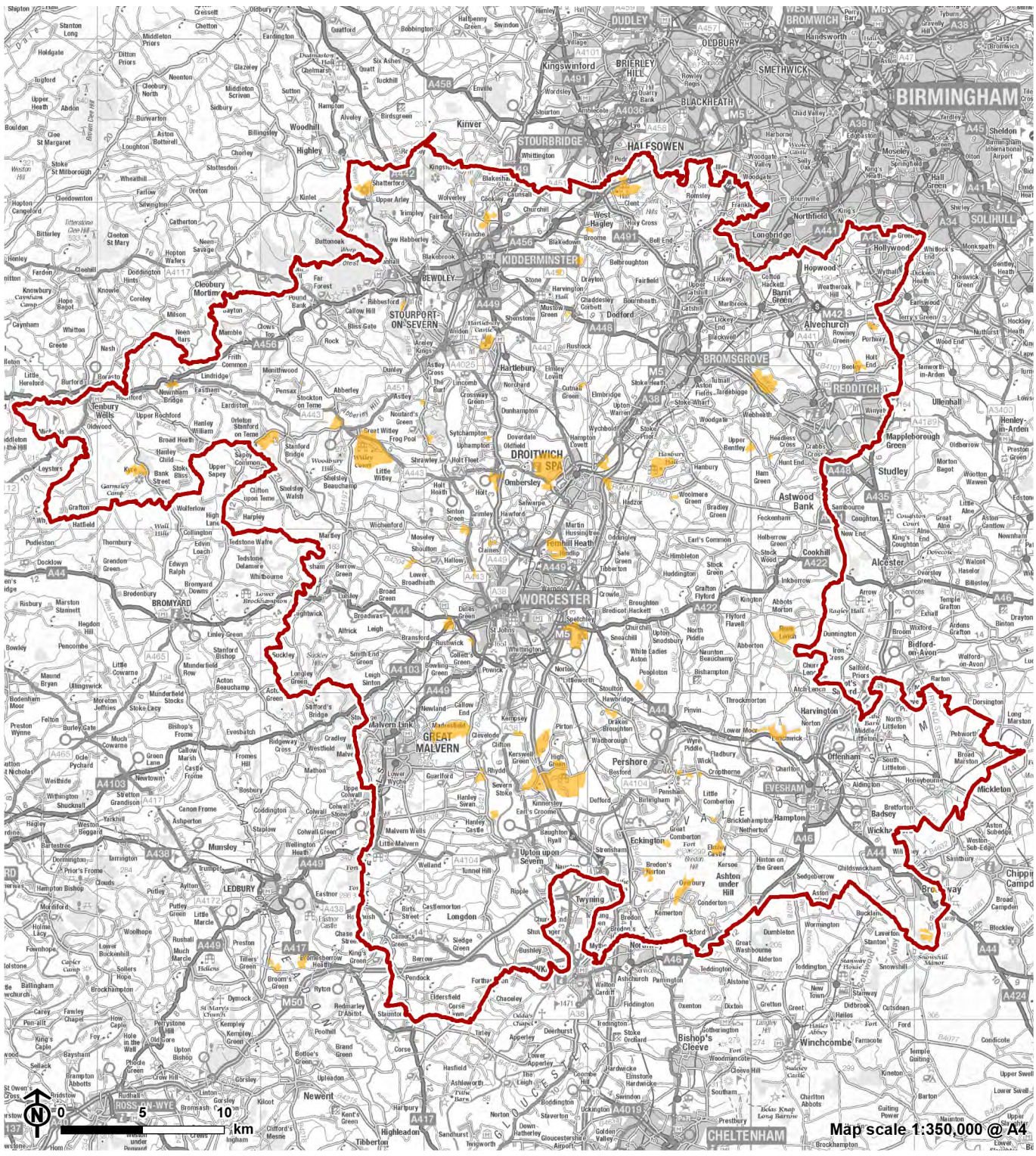


Figure 3.4: Statutory Designated Heritage Assets in Worcestershire

- Worcestershire County
- Registered Park and Garden
- Registered Battlefield
- Scheduled Monument
- Conservation Area
- Listed Building



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CB:KS EB:Bean_C LUC FIG3_5_11159_r0_Local_Heritage_Assets_A4P_14/04/2021
 Source: OS, Worcestershire County Council

Figure 3.5: Locally Important Parks and Gardens in Worcestershire

- Worcestershire County
- Locally important park and garden

Undesignated heritage assets

3.64 Undesignated heritage assets are not subject to a formal designation. Not all may be known about, but the Historic Environment Record (HER) includes the known archaeological and historic event information in the county. There are around 54,000 records on the HER, including archaeological sites, historic buildings, monuments and landscape features **[See reference 65]**.

Worcestershire Archive and Archaeology Service (WAAS) developed the Heritage at Risk Monitoring (HARM) project to monitor risk and change to a range of these historic environment features across the county **[See reference 66]**. This framework closely follows the methodology of English Heritage's own Heritage at Risk initiative. The HARM indicator will give a broader and more accurate picture of the state of the historic environment than analysis of designated assets alone can provide.

3.65 Undesignated assets (as well as designated assets) have potential to be damaged either directly or indirectly by minerals development, including potential for unknown archaeology at all sites. For example, sand and gravel sites tend to be associated with rivers, which help form this material. Pre-historic settlements on gravel terraces mean that river corridors and important migration routes are likely to contain significant archaeological remains, which could be damaged by or lost to development. In addition, minerals extraction can affect the water table and may include dewatering. This has potential to create an aerobic environment around previously waterlogged archaeological remains, which can lead to their degradation.

3.66 Eight sample areas were selected to ensure a representative range of monument and landscape settings in rural, urban and peri-urban locations across Worcestershire **[See reference 67]**. The sample areas do not change from year to year. The results of the assessment are displayed in Table 3.7, which includes the 2011 baseline, 2018 assessment results (latest available data) and 2014 as a mid-way comparison.

Table 3.7: The condition of the 71 Heritage Assets assessed

Year	Good	Intermediate	Poor
2018	44%	38%	17%
2014	46%	38%	15%
2011	48%	36%	16%

3.67 Table 3.9 shows that the condition of undesignated heritage assets has remained fairly stable, although the percentage of assets in good condition is declining. The majority of sample assets are in either 'good' or 'intermediate' condition. In 2018, 19% of heritage assets were deemed to be deteriorating in terms of risk, with only 5% improving in terms of risk.

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

- Buildings not protected in any form (e.g. within a Conservation Area) with no current function or in a state of disrepair; and
- Cropmarks/earthworks under arable cultivation or at risk from a specific threat e.g. flood damage or run-off erosion.

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

Cultural Heritage, Architecture and Archaeology: Likely evolution without the plan

3.70 The use of land in Worcestershire has changed throughout history and is likely to continue to change to meet society's ever-changing needs. There may also be changes based on changing values and policy, such as the need to provide biodiversity net gain and compensate for Green Belt loss. Although the aspirations of such changes are positive, they have the potential to alter the story of Worcestershire's historic landscape. However, such changes form part of the historic landscape themselves and can contribute to the story of the area, therefore the focus should be on ensuring this happens in a positive way.

3.71 Since 2011, the percentage of Grade I and II* listed buildings classified as being 'at risk' has fluctuated in Worcestershire. It is possible that the percentage of heritage at risk will increase without intervention.

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

3.73 MLP Policy MLP 22: Historic Environment requires that developers must protect and conserve the historic environment and support the delivery of enhancements to the historic environment through their development.

Cultural Heritage, Architecture and Archaeology: Role of Site Allocations DPD

3.74 The Site Allocations DPD can help designated heritage assets and unlisted heritage assets by ensuring that minerals sites are well-located and do not compromise these assets, which could lead to a decline in their management

(for example, mineral workings too close to a listed building could see the occupier withdrawing, leaving the building to fall into decline). Policies should require archaeological investigations of any site where there may be undisturbed heritage assets.

3.75 The Site Allocations DPD may also play a role in ensuring sites for extracting sufficient building stone/brick clay are available to provide for repairs to historic buildings, many of which will need to be maintained in the local vernacular style. This may require small-scale workings to be available, or for stocks of materials to be kept, to allow for small-scale repairs as and when needed.

Material Assets (including soils and agricultural land and Green Belt)

Material Assets: Baseline

Soils and Agricultural Land

3.76 The Agricultural Land Classification provides a framework for classifying land and soils according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use. Table 3.8 and Figure 3.6 shows the amount of Worcestershire's land that has been identified as each Agricultural grade. Note that Grades 1, 2 and 3a are considered best and most versatile agricultural land. However, national data does not distinguish between Grade 3a and Grade 3b.

Table 3.8: Agricultural Land Classification in Worcestershire

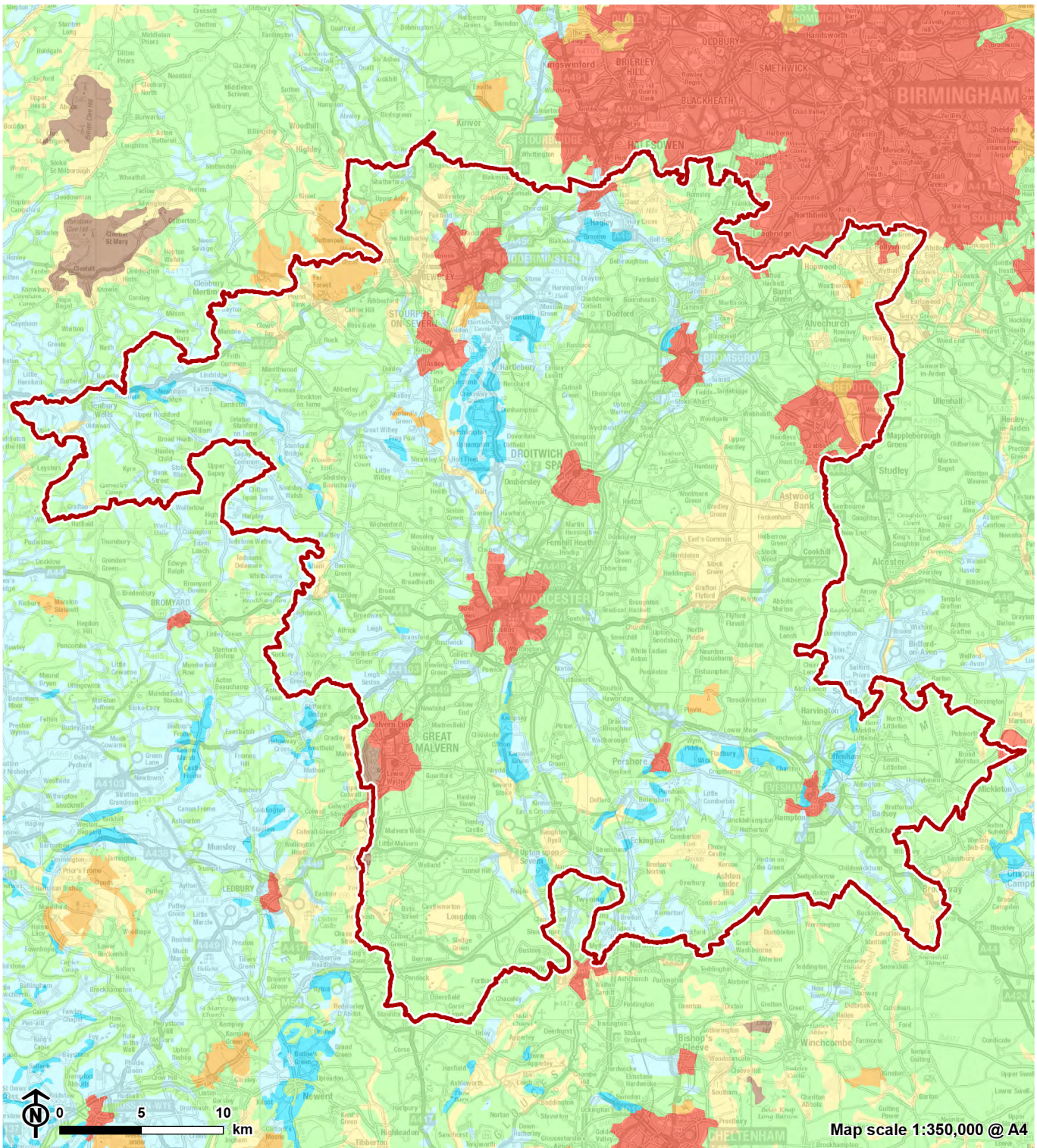
Agricultural Land Classification	Area (hectares)
Grade 1	4,834
Grade 2	28,884
Grade 3	110,578
Grade 4	17,135
Grade 5	411
Non-agricultural	2,526
Urban	9,683

3.77 No regional assessment of land falling within each agricultural land classification has been identified, but the following figures in Table 3.9 show the hectarage of Grade 1 agricultural land in some of Worcestershire’s neighbouring counties:

Table 3.9: Grade 1 Agricultural Land in neighbouring countries

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

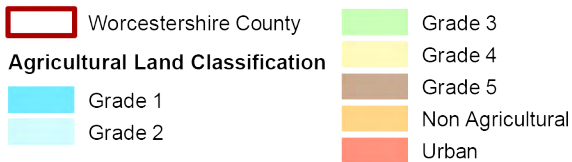
3.78 These figures suggest that Worcestershire’s agricultural land quality is good relative to other areas.



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 Source: OS, Natural England

Figure 3.6: Agricultural Land Classification in Worcestershire



Green Belt

3.79 Note that Green Belt is a policy designation and not an environmental designation. Nevertheless, it is included here as a material asset, to reflect the SA of the MLP.

3.80 The extent of Green Belt in Worcestershire is shown in Figure 3.7. The annual total area of Green Belt for Worcestershire since 2013 is summarised in Table 3.10. Based on 2020 data, Worcestershire has 41,420 ha of land within the Green Belt. This figure represents a slight increase on 41,390 in 2019, but has decreased overall since 2016, when the amount of land within the Green Belt was 41,600ha. Land within the Green Belt makes up approximately 24% of the county's total land area of 173,529 ha [\[See reference 68\]](#).

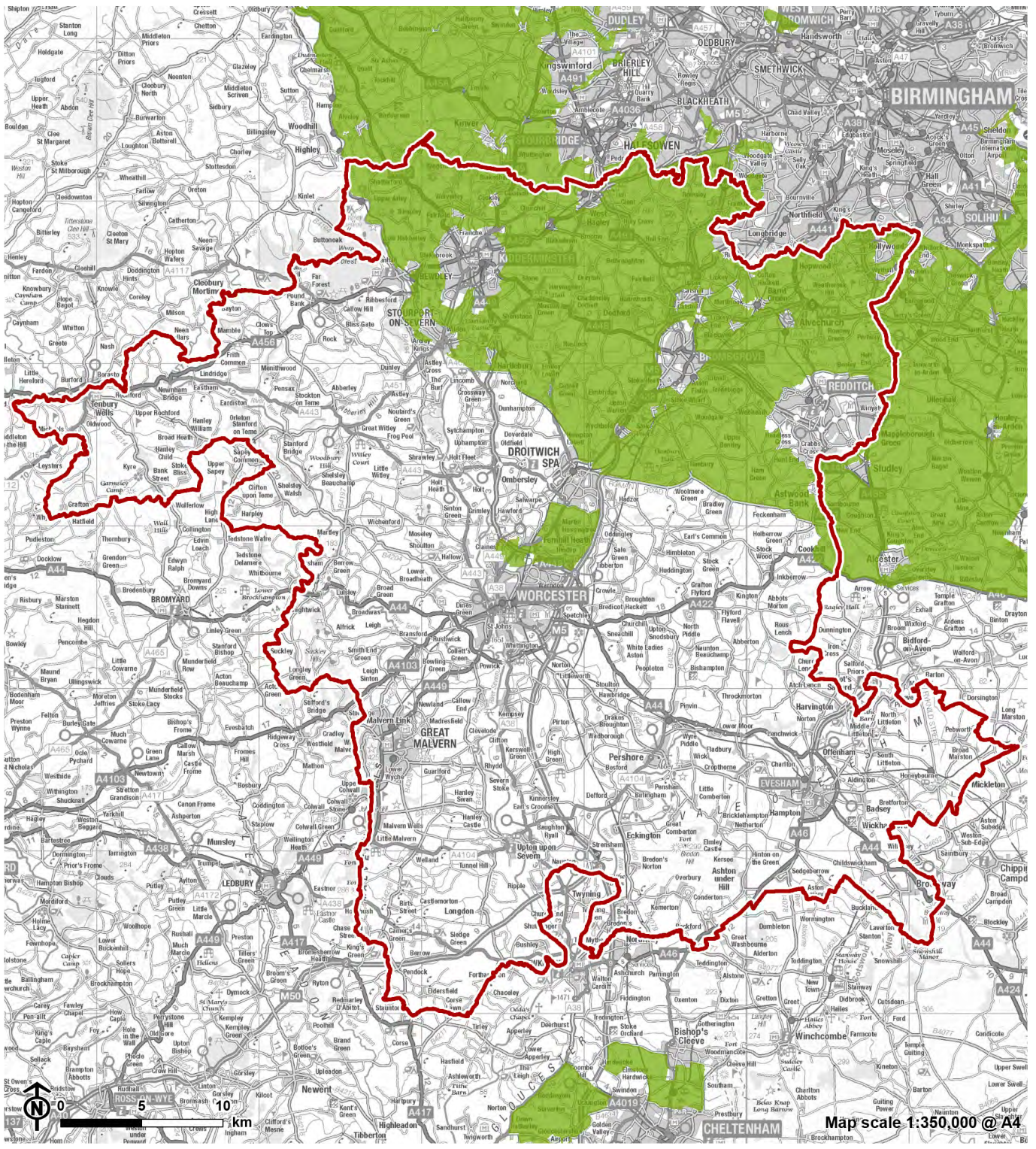
3.81 Mineral extraction sites are not considered inappropriate development within the Green Belt, provided that they preserve its openness and do not conflict with the purposes of including land within it [\[See reference 69\]](#). Impacts on Green Belt openness can be considered temporary in the context of mineral extraction as the land can be subject to restoration once the site has reached the end of its use. Visual impacts of quarries may in some cases be judged as a relevant factor in assessing impacts on openness. However, openness is not necessarily a statement about the visual qualities of the land and consideration of visual impacts can be a matter of planning judgement rather than law [\[See reference 70\]](#). There are currently five active mineral sites in the Green Belt in Worcestershire and a further four under consideration. There are also a number of restored minerals sites in the Green Belt, with recent examples including the Veolia Western Quarry and Chadwich Lane Quarry.

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

3.83 The loss in 2016 is explained in the South Worcestershire Development Plan Examination Inspector's Report (February 2016), which states that "The

land has been removed from the Green Belt for three reasons. First there was a clear error in its inclusion in the previous Local Plan. Second, the land does not perform any of the necessary Green Belt functions. Third, the land forms part of a larger site, with the remainder lying within Wyre Forest District and is also not in the West Midlands Green Belt.” The reports do not explain the loss in 2014.

3.84 The adopted County of Hereford and Worcester Minerals Local Plan does not contain monitoring indicators. Monitoring the impacts of permissions for all types of mineral development in the county has been addressed in the Authority Monitoring Reports to date by mirroring the indicators set out in the Waste Core Strategy where these have been deemed relevant to minerals development. It is the Council’s intention to continue to monitor these indicators through the AMR until the new Minerals Local Plan is adopted, at which point the AMR will monitor the objectives and indicators set out in the new plan. There is no indicator regarding the number of mineral development applications received and/or permitted within the Green Belt, nor target regarding achieving no unacceptable cumulative impact on the purposes of Green Belt designation (as there is for waste development in the county). This is because, as mentioned above, minerals extraction is not considered inappropriate development within the Green Belt provided that it preserves its openness and does not conflict with the purposes of including land within it.



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CB:KS EB:Bean_C LUC FIG3 7 11159_r0_Green_Belt_A4P 23/10/2020
 Source: OS, Worcestershire County Council, DCLG

Figure 3.7: Green Belt in Worcestershire

- Worcestershire County
- Green belt

Table 3.10: Area of Green Belt land (hectares) (at end of March 2020)

Area	2013	2014	2015	2016	2017	2018	2019	2020	Change 2013-March 2020
Bromsgrove	19,480	19,480	19,480	19,480	19,300	19,300	19,300	19,310	-0.9%
Redditch	1,830	1,830	1,830	1,830	1,800	1,800	1,800	1,800	-1.6%
Worcester	240	240	240	240	240	240	240	230	No change
Wychavon	8,870	8,860	8,860	8,830	8,830	8,830	8,830	8,860	-0.1%
Wyre Forest	11,220	11,220	11,220	11,220	11,220	11,220	11,220	11,220	No change
Worcestershire	41,640	41,630	41,630	41,600	41,390	41,390	41,390	41,420	-0.5%
England	1,639,160	1,638,630	1,636,500	1,635,480	1,634,700	1,629,510	1,621,150	1,615,800	-1.4%

Material Assets: Likely evolution without the plan

3.85 Worcestershire has a relatively large resource of high-quality agricultural land, but it is not possible to chart how this may have changed in recent years, as monitoring is not undertaken. It is not clear how this may evolve in the future, but with national brownfield targets no longer applicable, it may be that increasing proportions of greenfield land are used for development, which increases the chance of high-quality agricultural land being lost to development. This could have negative impacts in relation to climate change objectives due to the key role that soil plays as a carbon store.

3.86 In terms of Green Belt, more significant reductions (-180ha) in Green Belt land occurred for Bromsgrove from 2016-2017 and minor reductions for Redditch from 2016-2017 (-30ha) and for Wychavon from 2015-2016 (-30ha). For 2020, a slight increase (+10ha) in Green Belt land took place in Bromsgrove and a slight decrease (-10ha) took place in Worcester. Ongoing housing shortages mean that development pressure on the Green Belt is likely to increase. The Bromsgrove District Plan 2011-2030, adopted in January 2017, makes provision for a full Green Belt Review to be carried out by 2023, to enable approximately 2,300 dwellings to be allocated. This could see the net area of Green Belt reduce more significantly than in recent years.

3.87 MLP Policy MLP 24: Soils may have a positive contribution to the conservation of high-quality agricultural soils as it requires minerals development proposals to demonstrate that they will retain all soils within the site and make appropriate provision for soil stripping, soil handling, soil storage and re-use of soils.

3.88 MLP Policy MLP 18: Green Belt requires minerals development to demonstrate that, throughout its lifetime, it will preserve the openness and not conflict with the purposes of land in the Green Belt.

Material Assets: Role of Site Allocations DPD

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

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

Natural Resources (including Water and Air Quality)

Natural Resources: Baseline

Number of Air Quality Management Areas (AQMAs) in Worcestershire

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

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

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

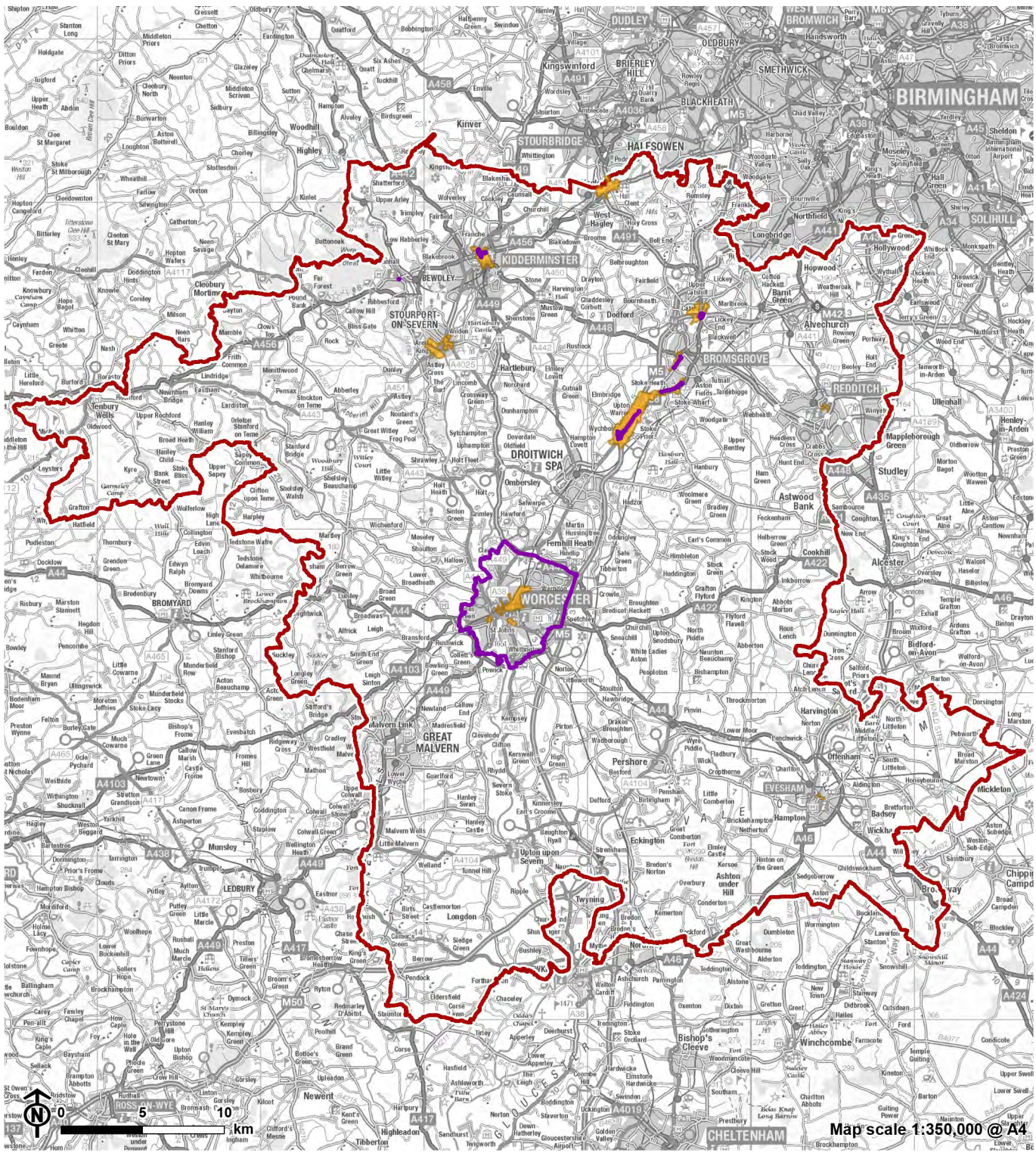
3.94 There are currently seven AQMAs in Worcestershire **[See reference 71]**, as shown in Table 3.11 and Figure 3.8.

Table 3.11: AQMAs in Worcestershire

District	AQMA
Bromsgrove	Worcester Road, Bromsgrove M42 Junction 1 at Lickey End, Bromsgrove Redditch Road, Stoke Heath
Wyre Forest	Welchgate, Bewdley Horsefair/Coventry Street, Kidderminster
Wychavon	Worcester Road, Wychbold
Worcester City	All of Worcester City Council area

3.95 In Bromsgrove, the AQMA at Kidderminster Road, Hagley was revoked following a review of monitoring data that confirms non-exceedance of many years. In Worcester City, an AQMA was declared within the whole administrative boundary of the City in 2019. A number of recommendations to improve air quality were made to the Worcester Licensing and Environmental Health Committee in January 2019 **[See reference 72]**.

3.96 There are 14 Air Quality Consultation Areas for Concern across Worcestershire, as shown on Figure 3.8. These are areas of poorer air quality that are at risk of meeting the requirements to be designated as AQMAs. Most Air Quality Consultation Areas for Concern encompass an existing AQMA, although some do not. There are Air Quality Consultation Areas for Concern around each AQMA except Welch Gate AQMA.



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 Source: OS, Worcestershire County Council

Figure 3.8: Air Quality Management Areas and Air Quality Consultation Areas for Concern in Worcestershire

- Worcestershire County
- Air Quality Management Area
- Air Quality Consultation Areas for Concern

Water quality

3.97 River water quality is affected by many factors. These can generally be divided into point sources, which have a traceable discharge point, and diffuse sources, which cannot usually be traced back to a single discharge point. Examples of point sources include domestic and industrial wastewater; examples of diffuse sources include polluted water and sediment washing off fields, recreational areas, roads and pavements. There have been significant improvements in wastewater discharges over recent years but pollution from diffuse sources is becoming an increasing threat.

3.98 The Water Environment (Water Framework Directive) (England and Wales) Regulations requires all surface and ground waters to reach 'good ecological' status (or potential in the case of Artificial or Heavily Modified Waterbodies) by 2027. In some cases the action required to meet good status / potential for some surface and ground waters are not technically feasible or are of disproportionate cost. These will have an alternative objective set by the River Basin Management Planning process (see Appendix A for further details). Quality of the county's water bodies is assessed by the Environment Agency under Water Framework Directive (WFD) classifications.

3.99 There are 11 River Basin Districts within England [\[See reference 73\]](#). Worcestershire lies wholly within the River Severn Basin District Catchment. Within the River Severn Basin District Catchment, there are a number of management catchments, the following of which overlap with Worcestershire: Severn Middle Worcestershire; Severn Vale; Teme; Avon Warwickshire. Although parts of these catchments do not lie within the county boundary of Worcestershire, the water bodies they contain flow across county boundaries. Therefore, there is potential for water quality changes within Worcestershire to impact on the wider catchment. A summary of the ecological classification of water bodies in these catchments for 2019 is provided in Table 3.12 to Table 3.15 [\[See reference 74\]](#).

Table 3.12: Ecological status of water bodies in Severn Middle Worcestershire Management Catchment 2019

Ecological status or potential	Number of water bodies
Good	0
Moderate	36
Poor	14
Bad	1

Table 3.13: Ecological status of water bodies in Severn Vale Management Catchment 2019

Ecological status or potential	Number of water bodies
Good	4
Moderate	35
Poor	9
Bad	0

Table 3.14: Ecological status of water bodies in Teme Management Catchment 2019

Ecological status or potential	Number of water bodies
Good	3
Moderate	32
Poor	4
Bad	2

Table 3.15: Ecological status of water bodies in Avon Warwickshire Management Catchment 2019

Ecological status or potential	Number of water bodies
Good	1
Moderate	54
Poor	22
Bad	1

3.100 It is apparent that only a small proportion of water bodies within the management catchments that overlap with Worcestershire achieve good ecological status. The situation is particularly severe in the Severn Middle Worcestershire Management catchment, where no water bodies achieve good status.

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

3.102 Minerals operations have the potential to impact negatively on water quality. Depending on the minerals being worked, extraction itself can involve flushing by high-pressure jets, or by controlled pumping. The subsequent processing can involve water in washing and screening. The used water is cleaned and returned to the environment. If the treated water is not sufficiently clean, dissolved or suspended minerals can leach into the ground below the water table and cause water quality issues that could impact on human health and biodiversity [\[See reference 75\]](#).

3.103 In 2018, Worcestershire Biodiversity Partnership produced a Rivers and Streams Habitat Action Plan [\[See reference 76\]](#) as part of the Worcestershire

Biodiversity Action Plan. Current factors affecting the habitat were identified and are summarized below:

- Pollution;
- Flood defence and land drainage works;
- Development within the floodplain;
- Agricultural land use;
- Water abstraction;
- Invasive plants and animals;
- Inappropriate river management;
- Recreational activities;
- Modification for boat traffic; and
- Lack of awareness/information.

3.104 The conservation aims of the Action Plan are for all rivers and streams in Worcestershire to be of improved water quality and to exhibit geo-morphological features and species assemblages that would be expected of natural rivers and streams in the county.

Water resource availability

3.105 Catchment Abstraction Management Strategies include the availability of water resources. The 2013 CAMS completed by the Environment Agency for Worcestershire Middle Severn (which includes a large part of Worcestershire) notes that the main issue regarding resources in the area is the historic over-abstraction of groundwater for public water supply and its accompanying environmental impact **[See reference 77]**. Worcestershire has several important principal aquifers within the bedrock solid sand deposits which are used for strategic public drinking water supplies, and secondary aquifers occur elsewhere within the bedrock geology of Worcestershire and within the superficial sand and gravel deposits of the river valleys **[See reference 78]**.

There is also a high demand for water to irrigate agricultural land, and this has the potential to conflict with environmental needs as the peak demand for irrigation usually coincides with periods of low flows within watercourses. This could have implications for water-intensive development (or multiple developments which are not in themselves water-intensive, but which present a considerable extra burden when considered collectively). Liaison with the Environment Agency will be needed from the earliest stage to establish whether or not water is available.

3.106 The 2020 Severn Corridor Abstraction Licensing Strategy [See reference 79] identifies groundwater around Kidderminster and Stourport as not available for licensing as it is at poor quantitative status and at risk of deterioration. Abstraction of groundwater is available but restricted from consumptive abstraction around Astley & Ombersley due to a similar condition of the groundwater body.

Contaminated land

3.107 The contaminated land regime [See reference 80] legislation places a statutory duty on local authorities to deal with contaminated land within their boundaries. However, the actual amount of land that is definitely 'contaminated' is not known. The information presented below is a measure of all the work to date undertaken by Worcestershire Regulatory Services (and their predecessor organisations) to clarify whether sites that have been subject to a potentially contaminative use, incident or activity, are 'Contaminated Land' or conversely are suitable for use. This covers sites that are contaminated from current activity, historical land-use, natural contamination or a one-off spill or incident. It is a measure of knowledge and associated risk as much as remediation of contaminated land sites. For most parts of the county the number of sites addressed proactively by landowners or developers is counterbalanced by new sites resulting from spills, leaks or incidents.

3.108 As of 1st April 2011 there were considered to be 7,941.94 hectares of potentially contaminated land in Worcestershire. The only known update since 2011 is the remediation of a site of approximately 6.5 hectares in 2016 [See

reference 81]. Additionally, Worcestershire Regulatory Services, on behalf of the local authorities, addressed a number of sites identified as potentially contaminated land. Following this work a small percentage of land that was identified as potentially contaminated was established to not be contaminated, through inspection, investigation or remediation during 2013-14.

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

- There has been an increase in the number of significant developments of greenfield sites across the county in line with District Local Plans; and
- National funding opportunities for contaminated land projects have been significantly reduced by central government.

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

3.110 Sand and gravel sales for Worcestershire are displayed in Table 3.16 below. Between 2007 and 2017, an average of 0.572 million tonnes of sand and gravel were produced for aggregate purposes each year in Worcestershire. In 2017, the Worcestershire sand and gravel sales average, over a 3 year period, remained at 0.464 million tonnes and over a 10 year average decreased by 0.014 million tonnes, when compared to 2016 [**See reference 82**].

Conversations between planning officers and operators suggest that the economic recession in 2008 reduced local demand for sand and gravel. Patterns of sales in Worcestershire broadly reflect the trends in the region, as shown below.

Table 3.16: Sand and gravel sales 2006-2016 (million tonnes)

Year	Worcestershire	Regional total
2008	0.758	8.332
2009	0.524	6.20
2010	0.618	5.95
2011	0.626	5.99
2012	0.620*	5.82
2013	0.659*	6.11
2014	0.520*	6.21
2015	0.538	7.04
2016	0.399	7.11
2017	0.455	N/A – The most recent report published in 2018 only goes up to 2016 for regional totals.

*Figures combined with Herefordshire due to reasons of confidentiality.

3.111 Table 3.17 provides an overview of reserve figures for aggregate land-won sand and gravel across Worcestershire, however, for the years 2012-2013 reserves were not able to be separated from Herefordshire.

Table 3.17: Sand and gravel reserves for aggregates 2008-2016 (million tonnes)

Year	Worcestershire	Herefordshire and Worcestershire
2008	3.02	-
2009	3.65	-

Year	Worcestershire	Herefordshire and Worcestershire
2010	4.49	-
2011	3.85	-
2012	-	6.57
2013	-	6.01
2014	2.50	-
2015	0.54	-
2016	4.29	-
2017	3.465	-

3.112 Some 50.8% of Worcestershire's sand and gravel deposits are not affected by significant viability, environmental or amenity constraints (60.2% of Worcestershire's solid sand deposits and 45.4% of Worcestershire's terrace and glacial sand and gravel deposits).

Annual production of land-won aggregates (crushed rock)

3.113 The supply of crushed rock is problematic because no significant applications for crushed rock extraction have been made in the county since 1997 (the only applications have been for alterations and a very modest deepening at Fish Hill, Broadway).

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

3.115 Crushed rock sales are displayed in Table 3.18 and Crushed Rock Apportionment is displayed in Table 3.19. For reasons of confidentiality, figures

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

Table 3.18: Crushed rock sales for aggregate purposes (million tonnes)

Year	Herefordshire/ Worcestershire	Worcestershire	Regional total
2008	0.216	-	3.436
2009	0.224	-	3.03
2010	0.2	-	2.8
2011	0.33	-	2.47
2012	-	0	3.12
2013	-	0	-
2014	-	0	-
2015	-	0	-
2016	-	0	-
2017	-	0	-

Table 3.19: Crushed rock apportionment (Worcestershire's apportionment is 2.8% of regional production)

Year	Worcestershire
2008-09	Confidential, below 2.8%
2009-10	Confidential, below 2.8%
2010-11	Confidential, below 2.8%
2011-12	0

3.116 Only 3.9% of Worcestershire's crushed rock deposits are not affected by significant viability, environmental or amenity constraints.

Energy

3.117 Energy minerals include coal, oil and gas, which are used for fuel. Whilst there are some historic coal workings in Worcestershire, there are only two small areas where geological information suggests that coal may now be present (and unworked) **[See reference 83]**. Coal has not been worked in Worcestershire since the 1970s and the latest data issued by the Coal Authority indicates that none of the coal deposits remaining in the county constitute a "surface coal resource" and therefore they are unlikely to be worked **[See reference 84]**. In addition, there is no history of oil and gas extraction in Worcestershire and no evidence of supplies of oil and gas, including unconventional hydrocarbons. Two exploratory boreholes were drilled in the county in 1967 and 1974, but no hydrocarbons were discovered **[See reference 85]**.

3.118 Minerals working involves some energy use, in terms of both transport and on-site operations. However, no minerals-specific data is available with regards to energy use in Worcestershire.

Natural Resources: Likely evolution without the plan

3.119 The number of AQMAs in Worcestershire has reduced since 2012, but this is in part due to the whole of Worcester City being declared an AQMA in 2019, where before individual areas in the city had been declared. The production of a Low Emission Strategy for Worcester City, as recommended by the Task and Finish Group review [See reference 86], is expected to help improve air quality in Worcester. Additionally, the recommendations of the review that all Council policy, formal decisions and key projects include consideration of air quality impacts and the delivery of electric vehicle infrastructure may provide mitigation of the prevalence of poor air quality in Worcester with possible knock-on effects for other parts of the county.

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

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

3.122 There are continuing efforts to remediate known contaminated land in Worcestershire. .

3.123 The likely evolution for sand and gravel is unclear at this stage, but demand for sand and gravel is inextricably linked to the performance of the wider economy. This could be increased by the Government's proposed planning reforms, or slowed by the impact of the Covid-19 pandemic. If there is an increase in construction and housebuilding, then it is likely that levels of

extraction will increase. In addition, the outcome of Brexit could affect demand, but this is uncertain. Investors may see commodities from mining as a safe investment among Brexit uncertainty, which could be beneficial to the UK mining industry, but weak construction and housing markets and the potential for higher trading tariffs could also negatively impact the mining industry. Worcestershire's Local Aggregate Assessment identifies a 'production guideline' of 0 tonnes per annum for crushed rock, but this could vary throughout the life of the plan. This is because the constraints surrounding Worcestershire's crushed rock resources are such that a crushed rock working at a significant scale is unlikely during the plan period.

3.124 MLP Policy MLP 19: Amenity has the potential to minimise the air quality impacts of any minerals development as it requires development to demonstrate that it will not result in unacceptable levels of harm to air quality throughout its lifetime.

3.125 MLP Policy MLP 27: Water Quality and Quantity requires development proposals to identify the status of water features in the site surroundings and set out how proposed development may impact water quality and flow. This includes identifying measures that would avoid or mitigate harm to the water environment.

3.126 MLP Policy MLP 27: Water Quality and Quantity is likely to contribute to efficient use of water resources as it requires development to optimise opportunities to enhance surface water and groundwater resources and will prevent development that will have unacceptable adverse effects on the quality and quantity of ground or surface water.

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

3.128 Despite the UK's departure from the EU, Water Framework Directive targets, have been adopted in UK law through the European Union (withdrawal) Act 2018. The Water Framework Directive was a major driver for change, and a

great deal of attention is being paid to water quality from a broad range of partners. It is expected that water quality will continue to improve in coming years. The Office for Environmental Protection (once established) will take on the role of enforcement now that the UK has left the EU.

3.129 The Rivers and Streams Biodiversity Action Plan, which forms part of the Worcestershire Biodiversity Action Plan, will contribute to improved water quality through habitat restoration at Bow Brook, Dowles Brook, the Severn and Avon.

3.130 MLP Policy MLP 19: Amenity includes a requirement that development proposals will not contribute to contamination of land and will provide adequate mitigation measures around storage areas for hazardous substances.

3.131 MLP Policy MLP 10: Steady and Adequate Supply of Sand and Gravel requires developments to contribute to ensuring that a landbank of permitted sand and gravel reserves in Worcestershire is maintained for at least 7 years and/or to the enhancement of Worcestershire's productive capacity for sand and gravel supply.

3.132 MLP Policy MLP 11: Steady and Adequate Supply of Crushed Rock requires developments to increase or maintain the landbank of permitted crushed rock reserves in Worcestershire to achieve a landbank of at least 10 years and/or to enable Worcestershire's productive capacity for crushed rock to be maintained or enhanced.

Natural Resources: Role of Site Allocations DPD

3.133 Minerals development can mean significant numbers of HGV movements, and mineral operations can cause localised air pollution through dust and emissions. The Site Allocations DPD should seek to guide development to locations that can be served by sustainable transport modes and avoid the

potential to add to vehicle emissions, particularly through HGVs passing through heavily-congested hotspots.

3.134 The Site Allocations DPD can help to ensure risks to water quality are minimised through requiring the siting and operation of mineral working to take into account run-off and wastewater disposal.

3.135 Many mineral operations are worked 'dry', which requires water to be pumped out of the quarry void and discharged, often off-site. The 'draw down' in the water table can have impacts on surrounding groundwater and hydrology. The Site Allocations DPD should seek to minimise adverse effects on the water environment during minerals operations.

3.136 The Site Allocations DPD should seek to ensure that the risk of contamination from mineral extraction is minimised. This includes the restoration of sites following the end of the extraction operations.

3.137 The Site Allocations DPD will seek to ensure that an adequate supply of sand and gravel is extracted in Worcestershire to support the identified need by allocating preferred areas and/or specific sites for minerals extraction. In addition, the DPD could allocate specific sites and preferred areas for crushed rock if suitable sites are promoted.

Climate Change

Climate Change: Baseline

CO₂ emissions

3.138 Data on carbon dioxide emissions, along with a number of other gases, is collected nationally in order to monitor progress towards UK targets (set under

the Climate Change Act 2008, as updated in 2019) to reduce carbon dioxide emissions to net zero by 2050. The data is broken down by Local Authority area and is only available on a two-year time lag; as of 2020, the latest data therefore represents the situation from 2018. This data is displayed in Table 3.20 and Table 3.21 [\[See reference 87\]](#).

3.139 Latest CO₂ emission figures for 2018, which include all emissions from all sources (excluding aviation, shipping and military transport), show that Worcestershire's per capita emissions have reduced by 1.98 tonnes compared with 2009, equating to a 21% reduction. This reduction is below the national level of a 28% reduction in 2018 compared to 2009.

3.140 Carbon emissions are not evenly spread across the county. The map below (Figure 3.9) shows the concentration of CO₂ emissions across the county. Higher emissions are focused around the urban areas and main motorway links. It is clear that the higher concentrations are near the centre of settlements, reflecting the areas which are more densely built up.

3.141 Table 3.22 provides a comparison of Worcestershire's CO₂ emissions with the surrounding area. Comparisons with adjacent areas show that Worcestershire performs relatively well in terms of CO₂ emissions per capita, with only Birmingham and Gloucestershire performing better.

3.142 A British Geological Society (BGS) working group [\[See reference 88\]](#) has examined certain minerals activity. By "taking account of total greenhouse gas emissions (i.e. including all greenhouse gases, mainly methane, not just carbon dioxide), Mining & Quarrying emissions have fallen significantly more than for the UK economy as whole, with the onshore minerals sector declining by 85%. The principal cause of this decrease is a significant reduction in methane emissions resulting from the contraction of the coal industry (a major emitter of methane). This reduction can also be attributed in part to the adoption of renewable energy sources, electrification and improved operational efficiency in mining and quarrying [\[See reference 89\]](#).

Table 3.20: CO₂ emissions per capita (t), 2009-2018

Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bromsgrove	9.0	9.2	8.5	8.6	8.5	8.0	7.9	7.8	7.5	7.1
Malvern Hills	8.0	8.2	7.6	7.6	7.4	7.1	6.9	6.7	6.4	6.2
Redditch	5.3	5.5	5.0	5.1	4.9	4.4	4.1	3.9	3.8	3.8
Worcester	5.0	5.2	4.8	4.9	4.7	4.2	3.9	3.7	3.5	3.4
Wychavon	10.1	10.5	9.6	9.6	9.5	8.9	8.8	8.5	8.1	7.9
Wyre Forest	5.2	5.5	5.1	5.2	5.0	4.6	4.4	4.2	4.0	3.8
Worcestershire	7.2	7.4	6.8	6.9	6.8	6.3	6.1	5.9	5.7	5.5
West Midlands	6.9	7.2	6.6	6.8	6.6	6.1	5.9	5.6	5.3	5.2
National	7.3	7.5	6.8	7.0	6.9	6.2	5.9	5.4	5.3	5.2

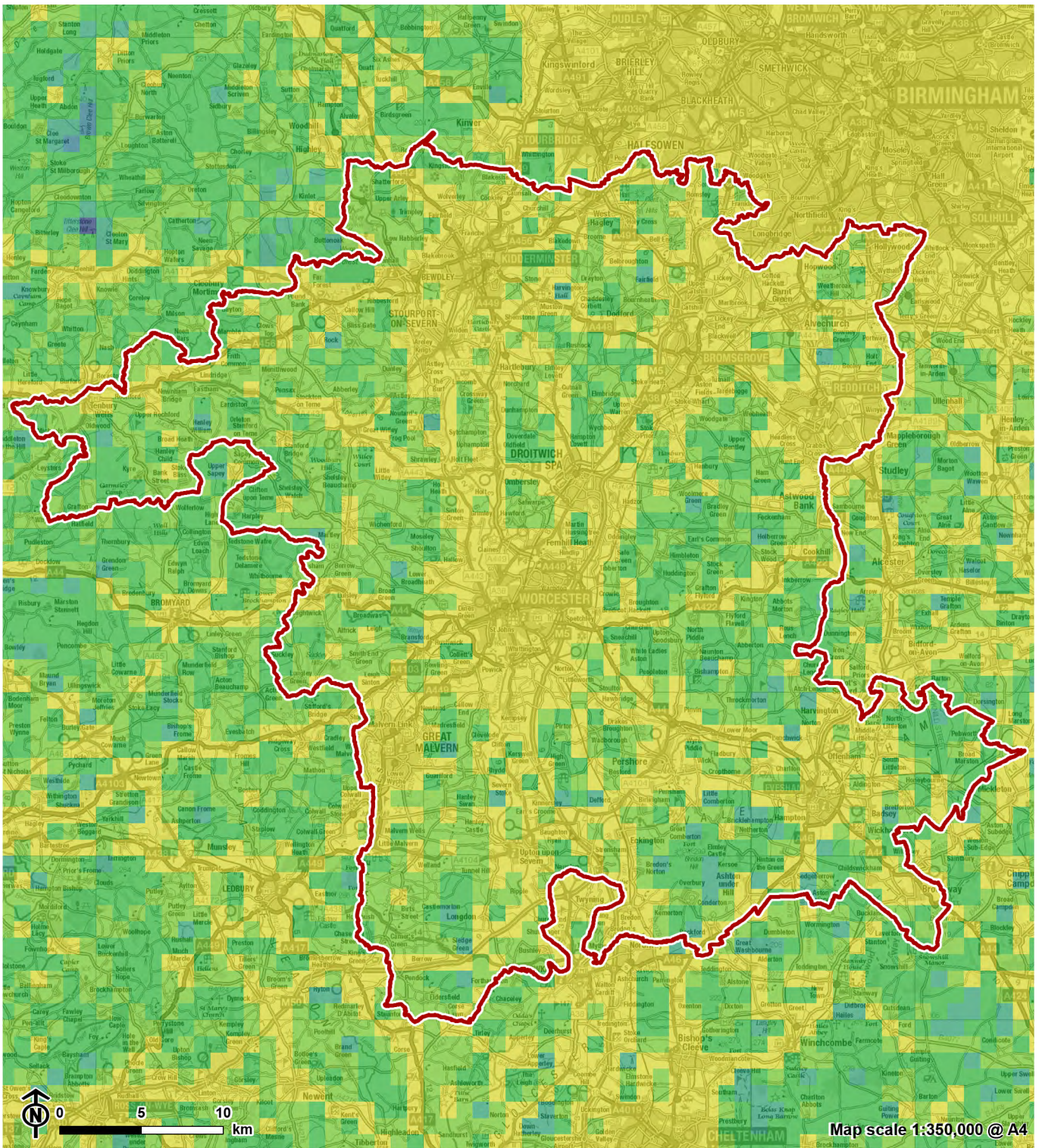
Table 3.21: Total CO₂ emissions (kt CO₂), 2009-2016

Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bromsgrove	837	856	793	814	807.	766.	76	751	735	705
Malvern Hills	597	610	569	569	561	530.	528	517	498	487
Redditch	439	460	418	434	415	370	352	333	324	322
Worcester	484	508	474	491	475	419	398	374	355	348
Wychavon	1,179	1,224	1,121	1,128	1,130	1,066	1,066	1,042	1,019	1,012
Wyre Forest	508	536.	501	511.	497	454	435	416	403	389
Worcestershire	4,044	4,193.	3,876	397.	3,885	3,603	3,551	3,432	3,333	3,263
West Midlands	38,277	39,860	37,056	38,151	37,365	34,594	33,733	32,530	31,317	30,970

3.143 In addition, “the UK is aiming for a low carbon economy, and has a statutory target to reduce greenhouse gas emissions by at least 80% below the 1990 baseline by 2050. We can help achieve our carbon reduction objectives by making the best use of our domestic mineral resources, where economically and environmentally feasible to do so. Carbon mitigation measures – renewable energy, CCS, waste minimisation, recycling and greater resource and energy efficiency – are crucial elements in limiting increased demand for new primary minerals. Facilitating the retention of efficient yet still energy intensive processes in the UK rather than importing the resultant products from less regulated countries may also yield a net global benefit in terms of carbon emissions.” The UK target of net zero carbon emissions by 2050 had not been introduced at the time of this study.

3.144 Figure 3.10 shows the total amount of atmospheric emissions for mining and quarrying in the UK from 1990 to 2018. There has been an overall decrease since 1990 [\[See reference 90\]](#).

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



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CB-KS EB:Bean_C LUC FIG3_9_11159_r0_CO2 Emissions_A4P 08/04/2021
 Source: OS, National Atmospheric Emissions Inventory, Royal Mail, National Statistics

Figure 3.9: CO2 Emissions for Worcestershire

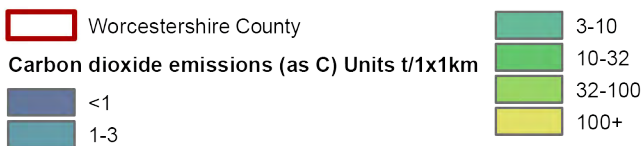
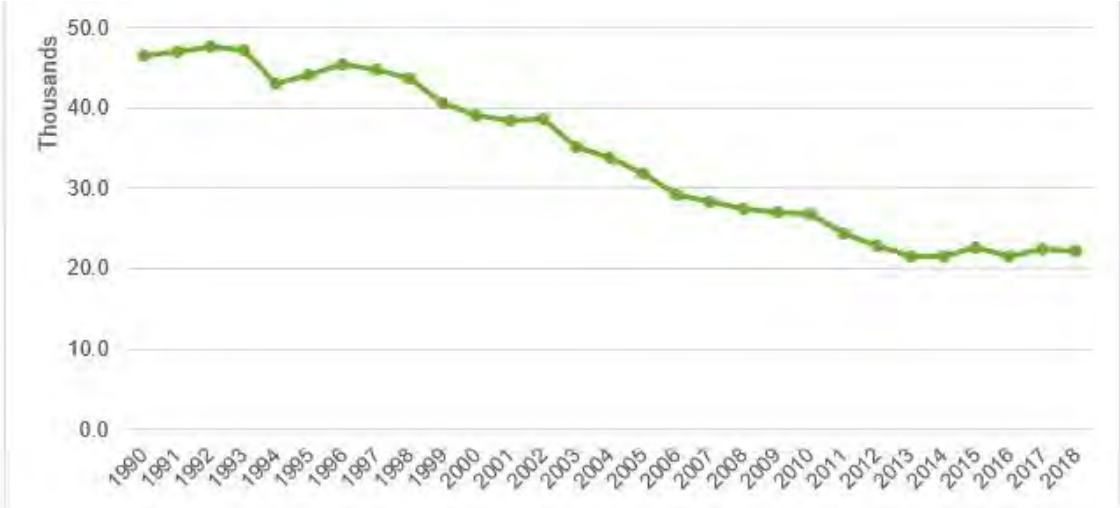


Table 3.22: Per capita CO₂ emissions for Worcestershire and surrounding county/unitary areas, 2018

Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Warwickshire	11.2	11.6	11.0	11.0	10.8	10.3	10.0	9.9	9.5	9.3
Staffordshire	8.1	8.5	8.0	8.1	8.0	7.4	7.3	7.0	6.8	6.7
Herefordshire	7.9	8.3	7.6	7.6	7.4	6.9	6.6	6.3	6.1	5.9
Shropshire	7.5	7.7	7.0	7.2	7.0	6.5	6.2	5.9	5.7	5.7
Solihull	7.3	7.8	7.4	7.8	7.5	6.8	6.9	6.6	6.3	6.2
Worcestershire	7.2	7.4	6.8	6.9	6.8	6.3	6.1	5.9	5.7	5.5
Gloucestershire	7.1	7.4	6.8	7.1	6.8	6.2	6.0	5.7	5.5	5.3
Birmingham	5.4	5.5	5.0	5.2	5.0	4.4	4.2	3.9	3.7	3.6

Figure 3.10: UK Greenhouse gas emissions – mining and quarrying (thousand tonnes CO₂ equivalent)



Notes:

- 1. Components may not sum to totals due to rounding.
- 2. Includes emissions from fuel sources which are used by road vehicles.

Predicted impacts of climate change

3.146 Worcestershire's climate is changing, along with the rest of the UK. We now have shorter, milder winters, but increasingly extreme weather. Such changes will impact on Worcestershire's environment, economy and society. For example:

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

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

Climate Change: Likely evolution without the plan

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

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

3.150 MLP Policy MLP 29: Transport may contribute to reduced CO₂ emissions in minerals-related transport by requiring proposals to prioritise the use of alternatives to road transport, including water, rail, conveyors and pipelines.

3.151 MLP Policy MLP 28: Flooding requires development proposals to provide technical assessments to identify potential impacts on flood risk, taking into account the impacts of climate change.

Climate Change: Role of Site Allocations DPD

3.152 The Site Allocations DPD could have a major role to play in mitigating climate change, and in adapting to its unavoidable impacts. CO₂ emissions can be influenced by, among other issues, the type of minerals being won, the methods used for extraction, the methods used for transportation, the construction and operation of site plant and buildings and the nature of site restoration.

3.153 The Site Allocations DPD has the potential to influence CO₂ emissions by locating minerals development to minimize transport distances and facilitate transport by non-road means.

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

3.155 The Site Allocations DPD should seek to ensure mineral operations are resilient to predicted climate change impacts, including flooding and subsidence.

Flooding

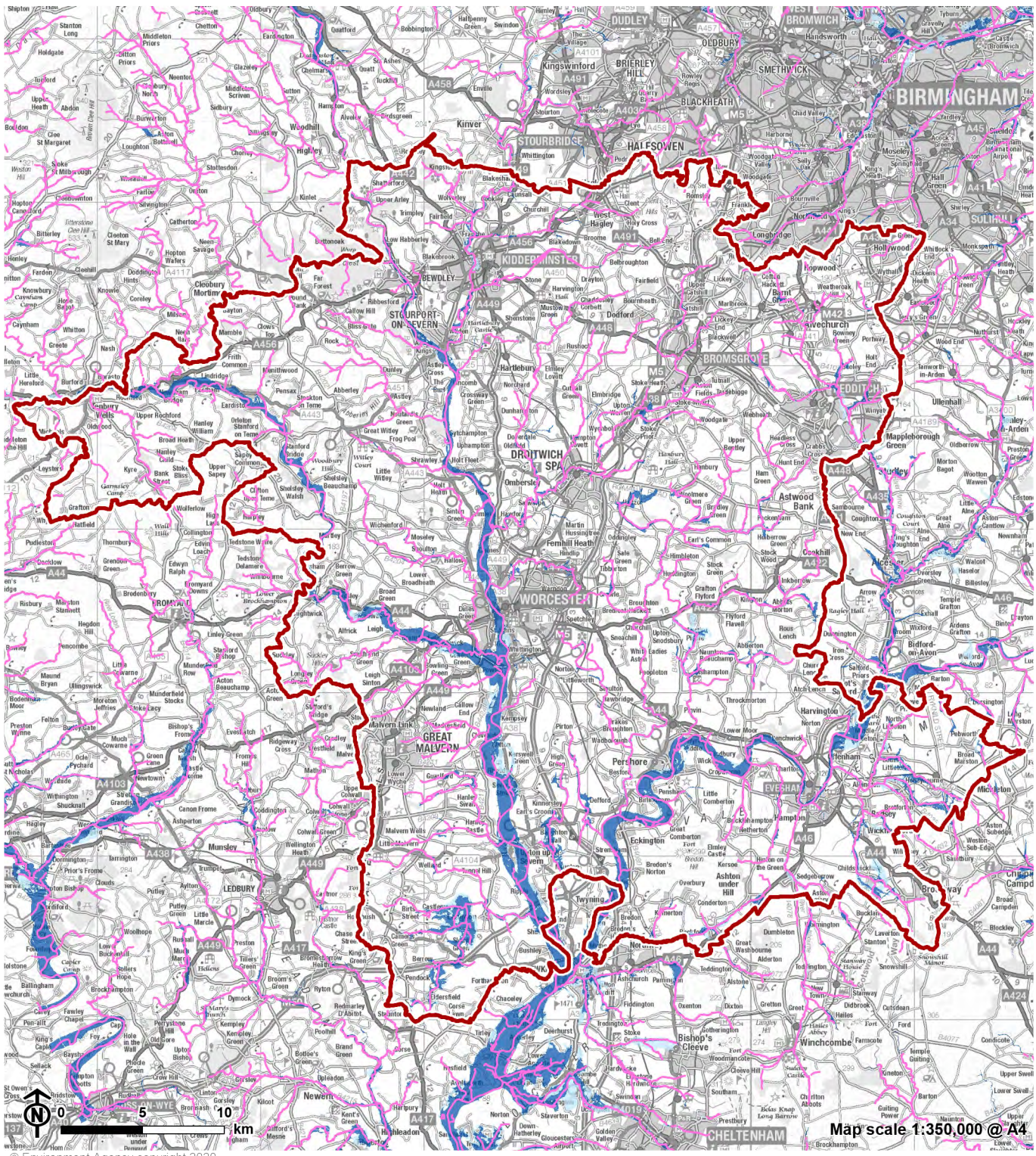
Flooding: Baseline

Risk of flooding

3.156 Flooding is considered to be a major issue for Worcestershire. The locations of Flood Zones in Worcestershire are displayed in Figure 3.11. Over the years floods have occurred as a result of rivers including the Severn, Avon and Teme bursting their banks and through surface water flooding as a result of intense rainfall. During severe flooding in 2007, the cost to Worcestershire from closures and disruption has been estimated at £6.4m/week [See reference 91].

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

3.158 Information relating to the number of properties in Worcestershire at risk from fluvial flooding and surface water flooding is provided by the Environment Agency [See reference 92]. The properties at risk data is updated following a flood event and covers residential and non-residential properties in Worcestershire. Data provided by the Environment Agency for properties at risk of flooding accounts for properties that appear in the relevant flood zones and represents the situation without flood defences. From 2011 onwards, data has also been available on properties at risk of surface water flooding.



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CB:KS EB:Bean_C LUC FIG3_11_11159_r0_Flood_Zones_A4P 23/10/2020
 Source: OS, Environment Agency

Figure 3.11: Flood Zones in Worcestershire

- Worcestershire County
- Flood zone 3
- Flood zone 2
- River

3.159 Worcestershire has the second largest percentage land area at risk of flooding in the West Midlands Region (approximately 10%), but in terms of numbers of households at risk is performing better than the national average **[See reference 93]**.

3.160 It is estimated that in the West Midlands, 6.5% of land has a 1% chance of flooding in any one year. This puts around 4% of properties in the region at risk of flooding. Around 80,000 of these properties at risk are thought to be residential **[See reference 94]**.

3.161 Over 5.2 million homes and properties in England are at risk from flooding and coastal erosion **[See reference 95]**.

Fluvial flooding

3.162 Fluvial flooding is the primary source of flood risk across the majority of Worcestershire in terms of both flooding extent and the number of properties at risk. Mineral deposits such as sand and gravel are often abundant in floodplain areas, therefore several sites are likely to be either partially or completely within flood zones.

3.163 Approximately 11,200 (4.3%) addresses are at risk from fluvial flooding and approximately 20,000 (7.8%) from surface water flooding. Fluvial flooding has occurred in South Worcestershire (Worcester City, Malvern Hills and Wychavon Districts) on several occasions in the past. The most recent notable events occurred in 1998, 2000, 2007 and, more recently, the large scale and disruptive flooding experienced in the winters of 2014, 2020 and 2021 **[See reference 96]** **[See reference 97]**.

3.164 Within Worcestershire, peak river levels recorded at monitoring stations on the River Severn occurred in 2000, 2007 and 2020 **[See reference 98]**. In 2020, flood water breached flood defences on the Severn at Bewdley as a result of heavy rain from Storm Dennis, which highlights the vulnerability of Worcestershire to fluvial flooding in the context of increased extreme weather

events due to climate change. Peak river levels on the River Teme within Worcestershire also occurred within 2007 and 2020 [See reference 99].

Surface water flooding

3.165 Surface water flooding is often the result of high peak rainfall intensities, and insufficient capacity in the sewer network.

3.166 The Worcestershire Surface Water Management Plan, 2018 (SWMP) has been produced by WCC working in partnership with Bromsgrove District Council, Redditch Borough Council, Wyre Forest District Council, Worcester City Council, Malvern Hills District Council, Wychavon District Council, the Environment Agency, Severn Trent Water Limited and the Lower Severn Internal Drainage Board [See reference 100].

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

3.168 The flooding event in 2007 was particularly significant in terms of impact on people, infrastructure, businesses, properties and the environment in Worcestershire with over 4,700 properties being internally flooded. It has been estimated that the total cost for that flooding event was around £6.4 million per week. Major surface water and main river flooding has occurred again as recently as February 2014, February 2016 and February 2020.

Ground water flooding

3.169 Groundwater flooding is defined as the emergence of groundwater at ground level. Minerals workings in most cases excavate below the natural water table, which during periods of heavy rainfall, may rise. Mineral workings often operate a pumped drainage system and can therefore interfere with groundwater flow. The Strategic Flood Risk Assessment (SFRA) for South Worcestershire (2019) suggests that these issues would be most appropriately addressed in a site-specific Flood Risk Assessment at the planning application stage [See reference 101].

Reservoir flooding

3.170 Based on the EA's reservoir flood maps [See reference 102], the largest areas at risk from reservoir flooding lie along the River Avon in the south east of the county and the River Salwarpe, downstream of Droitwich Spa. There is also a large area of flooding along the Mythe Brook in the south of the county between the Rivers Severn and Avon which may be associated with failure of the Pirton Pool. However, reservoir flood events are fairly constrained along the River Severn as it runs through Worcestershire.

Flooding: Likely evolution without the plan

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

3.172 Following the introduction of the Flood and Water Management Act in 2010, Worcestershire County Council was named as a Lead Local Flood

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

3.173 MLP Policy MLP 28: Flooding will ensure that proposed mineral development will avoid increasing flood risk to people and properties and will contribute to the overall flood risk reduction.

Flooding: Role of Site Allocations DPD

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

Access to Green Space

Access to Green Space: Baseline

3.175 In Worcestershire there are over 4,600km of public rights of way and over 11,750 hectares of free-to-access natural green spaces [See reference 103]. Many rights of way are important in their own right, providing access to the countryside, opportunities for active recreation and cultural links; however they can also contribute to the wider environment, providing corridors for biodiversity and contributing to landscape character, local distinctiveness and the experience and character of the historic environment.

Access to Green Space: Likely evolution without the plan

3.176 The likely direction is unclear at this stage, however, there is potential for mineral extraction to reduce access to green spaces in the short term, but there is also potential for the restoration of sites to contribute positively to the area by increasing the amount of accessible green space and improved public rights of way. Minerals development may temporarily prevent or alter access to green spaces, public rights of way or other access routes, but by planning and designing individual sites as part of a landscape-scale corridor, opportunities to connect, extend or enhance assets can be optimised. Additionally, MLP Policy MLP 20: Access and Recreation will encourage protection and enhancement of rights of way and public access provision.

Access to Green Space: Role of Site Allocations DPD

3.177 The Site Allocations DPD can help to protect public rights of way and green space by avoiding minerals development in areas that would coincide with these assets. Through restoration, minerals development could result in creation of new, publicly accessible green space.

Health

Health: baseline

General health categories

3.178 The Office of National Statistics census data provides an indication of the general health of the population in an area [See reference 104]. The latest available figures are from 2011 and are shown in Table 3.23.

Table 3.23: ONS General Health

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

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

3.180 During the last few years, the health levels have been close to England's averages and in some cases above them. The Joint Strategic Needs Assessment – Annual Summary produced by the Worcestershire Health and Well-Being Board [See reference 105] shows that male and female life expectancy in the county is currently above the national average. However, for some health indicators, such as excess weight in adults and smoking at time of delivery, Worcestershire is significantly worse than the national average.

3.181 In terms of mental health, it was estimated that the prevalence of common mental health disorders in the population aged 16 or over in Worcestershire is 15%, which is lower than the national figure of 16.9%.

Health: Likely evolution without the plan

3.182 The likely direction of health and well-being in Worcestershire is unclear at this stage; Worcestershire's general health could be expected to change positively when looking at recent trends. However, the Covid-19 pandemic and the subsequent economic recession are likely to have a negative impact on mental health in the short to medium term.

3.183 MLP Policy MLP 19: Amenity is likely to provide protection to residents' health from impacts that minerals development can have on air quality, dust, odour and noise/vibration. Additionally, MLP Policy MLP 20: Access and Recreation may improve the likelihood of residents engaging in physical activity, which will be beneficial to health.

Health: Role of Site Allocations DPD

3.184 Access to the natural environment can reduce stress levels and encourage people to become more active, helping to tackle obesity, coronary heart disease and mental health problems. During operation, some mineral workings may impact on public rights of way, including footpaths and bridleways. Depending on how these public rights of way cross the site, it may be possible in some cases to work around them. In other cases this would result in sterilising significant mineral deposits and diversion or closure of public rights of way may be more appropriate.

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

3.186 The DPD could help to minimise adverse health effects from air pollution, dust, noise, vibration and other disturbance and amenity issues, by locating minerals development away from sensitive receptors, such as homes and schools.

Waste

Waste: Baseline

3.187 Waste can be broken down into four broad categories: local authority collected waste (formally known as 'municipal' or 'household' waste); commercial and industrial waste; construction and demolition waste; and hazardous waste. Construction and demolition waste (sometimes referred to as 'inert' waste) is the only type of relevance to the Site Allocations DPD as inert

landfills used for disposal of this waste stream may be located in completed mineral extraction sites. Recycling of aggregates from construction and demolition waste may also sometimes take place within mineral extraction sites (due to using the same processing equipment).

3.188 The national waste strategy suggests that data collection for construction and demolition waste needs to be improved so that targets can be set to monitor progress [\[See reference 106\]](#). The latest estimates for England indicate that commercial and industrial waste generation was around 37.2 million tonnes in 2018, compared to 32 million tonnes in 2010. It is suggested that figures from 2017 onwards are not comparable with earlier years given that the Environment Agency made improvements to their data collection. In 2016, around two thirds of 'Recycling and other recovery' is recovery of mineral wastes from the construction, demolition and excavation sector [\[See reference 107\]](#). Projected waste arisings for Worcestershire are displayed in Table 3.24 [\[See reference 108\]](#).

3.189 The percentage of all types of waste that go to landfill has reduced year-on-year since 2010 [\[See reference 109\]](#). In 2016 the amount of inert waste landfilled in Worcestershire was 317,686 tonnes in 2016 and 246,990 tonnes in 2017, across 5 sites, leading to a cumulative 1,045,677 tonnes of inert waste landfilled in the country since 2009. This is approximately 18% above the projections made in the Waste Core Strategy. This means that there is less inert landfill capacity remaining at this stage in the Waste Core Strategy than was projected. In 2017, static facilities in Worcestershire received approximately 78,000 tonnes of inert waste for treatment and a further 93,000 tonnes for transfer [\[See reference 110\]](#). The re-use of inert waste on site is common at construction sites in Worcestershire, but data is not available on the volume processed by mobile plants. Worcestershire does not have any rail depots to import and export minerals (including inert waste) and therefore all such transport takes place by road.

Table 3.24: Projected waste arisings: Worcestershire (tonnes per annum)

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

Waste: Likely evolution without the plan

3.190 With the Our Waste, Our Resources strategy in place, the percentage of all waste that goes to landfill should continue to fall, recycling rates should increase and resource efficiency should improve. Much of the focus of recent legislation is given to reducing packaging and making producers responsible for the waste that is brought to the market. Such approaches should positively impact household waste rates in particular. Additionally, the Defra Waste Management Strategy for England [\[See reference 111\]](#) sets out that waste management plans must include measures to achieve 10% or less of municipal waste being sent to landfill by 2035.

3.191 The County Council currently expects construction and demolition waste generated in the county to remain stable and Hazardous waste to see a small increase from changes in the number of households. The net effect is that a small but a consistent rate of waste increase is predicted in Worcestershire for the foreseeable future [\[See reference 112\]](#) [\[See reference 113\]](#).

3.192 In the short to medium term, the rate of waste production may increase due to the Covid pandemic, for example due to the use of single-use PPE and packaging for take-away food.

Waste: Role of Site Allocations DPD

3.193 The role of the DPD is to allocate specific sites and preferred areas to facilitate the delivery of the primary mineral resources which are still required after the contribution of substitute, secondary and recycled materials and mineral waste has been taken into account. Whilst the Site Allocations DPD will have a limited impact on waste, minerals development is likely to generate some waste in the operational phase.

Transport

Transport: Baseline

CO₂ emissions in the county arising from road transport

3.194 CO₂ emissions from transport in Worcestershire are displayed in Table 3.25 [See reference 114]. From 2009 to 2012, Worcestershire reduced its CO₂ emissions for road transport. However, since 2014, Worcestershire and each district within it, has had increased CO₂ emissions.

3.195 As well as road transport, minerals can be transported via rail and waterways. These methods of transport can help take pressure off the road network, potentially resulting in reduced congestion and CO₂ emissions. However, according to the MLP, there are currently no handling or processing facilities for the bulk transport of minerals by rail or inland waterway in

Worcestershire. It is considered that the scale and type of Worcestershire's resources and location mean that it is unlikely that permanent facilities dedicated to the bulking of minerals will be developed, but there may be some opportunities for smaller-scale water or rail transportation. The only commercial wharfage facilities in Worcestershire are located at Ryall House Farm Quarry which receives material transported along the River Severn. There are no major rail freight facilities and no mineral sites with rail connections in Worcestershire, and opportunities for rail freight transport are limited at present.

Transport: Likely evolution without the plan

3.196 The likely direction of performance is unclear at this stage. However, transport in Worcestershire is likely to be impacted positively by UK net-zero targets and decarbonisation of transport that will occur with the phasing out of petrol and diesel vehicles (the sale of diesel cars and vans is to be banned by 2030). The COVID-19 pandemic, whilst still ongoing, has resulted in a push for a 'green economic recovery' and therefore £1.8 billion has been invested into infrastructure and grants to increase access to zero-emission vehicles. Additionally, it is likely that working from home will become much more prevalent, which is likely to result in a reduction in car journeys [See reference 115].

3.197 MLP Policy MLP 29: Transport will help ensure that mineral developments will use the most sustainable transport options and that they will not have an unacceptable effect on congestion.

Transport: Role of Site Allocations DPD

3.198 The extraction of minerals often involves substantial vehicle movements, including HGVs to transport plant and extracted material. Additionally, vehicle emissions can come from staff commuting, visitors, etc. As minerals can only be extracted where they are found, this can result in long-distance transporting of material to where it is needed, although as aggregates are bulky, costly to

Chapter 3 Baseline Information

transport and generally fairly low value, they are typically only transported about 30 miles from their source [See reference 116]. The Site Allocations DPD can seek to influence mineral site selection by guiding operators to sites with the potential to make more use of sustainable transport modes, including rail and water-borne transport. The Site Allocations DPD can also develop policies to require sites to have green travel plans in place.

Table 3.25: CO₂ emissions estimates for transport total (kt CO₂)

Area	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Bromsgrove	501	498	477	474	475	479	490	493	492	466
Malvern Hills	293	287	284	270	272	278	289	297	290	283
Redditch	96	95	92	86	84	86	86	87	93	93
Worcester	106	106	103	99	97	98	100	102	99	99
Wychavon	527	521	516	492	505	513	530	545	539	521
Wyre Forest	148	147	143	137	136	138	140	141	139	137
Worcestershire	1,672	1,654	1,613	1,559	1,568	1,592	1,635	1,665	1,653	1,599
West Midlands	12,457	12,396	12,247	12,127	12,002	12,179	12,477	12,643	12,649	12,408
England	127,241	126,055	123,985	122,456	121,503	123,076	125,645	128,168	128,668	126,801

Growth with Prosperity for All

Growth with Prosperity for All: Baseline

Average Worcestershire household income

3.199 Worcestershire’s gross disposable household income has been increasing for each district since 2013. The increase across the Local Authorities within Worcestershire between 2013 and 2018 is displayed below in Table 3.26 [See reference 117].

Table 3.26: Gross disposable household income (GDHI) (£ million) by district, 2018

Local authority	Gross disposable household income 2013	Gross disposable household income 2018
Bromsgrove	1,935	2,384
Malvern Hills	1,431	1,775
Redditch	1,361	1,700
Worcester	1,760	2,055
Wychavon	2,288	2,930
Wyre Forest	1,559	1,887

Deprivation

3.200 Levels of deprivation vary across Worcestershire. Bromsgrove is one of the 20% least deprived districts in England. In Malvern Hills, there is a lower proportion of people living in the most deprived areas in the country when compared to the England average. However, the gap in life expectancy for men is 2.4 years and for women is 3.9 years between the most and the least deprived areas in Malvern Hills. Redditch has a higher proportion of people living in the most deprived areas compared to the England average. Worcester is less deprived than England but has significant pockets of deprivation in the central area and towards the north east of the city. Similarly, Wychavon has lower levels of deprivation than England. Wyre Forest has a higher proportion of people living in the most deprived areas in the country compared to the England average. Life expectancy is 9.4 years lower for men and 8.5 years lower for women in the most deprived areas as opposed to the least deprived areas.

Percentage employment rate (working age)

3.201 Table 3.27 below shows the employment rate in Worcestershire compared to the West Midlands and Great Britain from 2008 to 2017 [[See reference 118](#)].

Table 3.27: Employment rate in Worcestershire, the West Midlands and Great Britain, 2009-10 to 2019-20

Area	Oct 09 – Sep 10	Oct 10 – Sep 11	Oct 11 – Sep 12	Oct 12 – Sep 13	Oct 13 – Sep 14	Oct 14 – Sep 15	Oct 15 – Sep 16	Jul 16 – Jun 17	Apr 17 – Mar 18	Jan 18 – Dec 18	Apr 19 – Mar 20
Bromsgrove	77.8	71.5	75.1	80.5	79.4	78.4	76.7	81.5	78.6	74.9	82.6
Malvern Hills	74.4	71.4	74.0	77.5	81.1	76.2	67.4	75.4	71.8	72.6	79.4
Redditch	72.3	70.9	84.3	74.9	78.3	74.4	75.0	75.5	83.0	82.5	82.0
Worcester	75.8	66.5	71.7	77.0	78.3	79.1	79.4	81.2	78.1	80.8	83.1
Wychavon	78.9	76.8	75.3	78.0	75.3	81.8	80.5	85.0	77.2	81.5	79.6
Wyre Forest	73.3	73.2	73.6	75.6	72.4	73.8	72.4	74.2	78.8	82.1	80.6
Worcestershire	75.6	71.9	75.5	77.2	77.2	77.6	75.9	79.3	78.0	79.4	83.1
West Midlands	67.9	67.0	68.0	68.8	69.6	70.7	71.0	76.0	67.2	73.3	77.8
Great Britain	70.3	69.9	70.4	71.0	72.2	73.4	73.9	78.3	75.0	75.1	79.1

Table 3.28: Worcestershire’s employment and unemployment rates relative to neighbouring counties/unitary authorities (April 2019 to March 2020)

Area	Employment rate (%)	Unemployment rate (%)
Shropshire	82.2	3.2
Staffordshire	82.0	2.8
Warwickshire	80.1	3.3
Herefordshire	82.9	2.7
Worcestershire	83.1	3.6
Solihull	80.2	3.9
Dudley	77.2	5.3
Birmingham	72.0	9.0

3.202 Between April 2019 and March 2020 the employment rate for working age people in Worcestershire was 83.1%, which is an increase from the prior period of January 2018 to December 2018, when the rate was 79.4%.

3.203 The employment rate in Worcestershire is better than both the national and regional averages, as displayed in Table 3.28 above.

GVA per hour worked in Worcestershire

3.204 GVA per hour worked for Worcestershire is £29.30, which is below the GVA per hour worked for England of £33.60 [See reference 119].

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

3.206 The Minerals and Waste Authority Monitoring Report [See reference 120] records the increase in GVA in Worcestershire from waste management and minerals (due to the low numbers of people employed in the minerals and waste industry, both sectors are combined), as shown in Table 3.29.

Table 3.29: GVA from waste management and minerals

GVA	2016	2017	% change (2013-2017)
Minerals development GVA* (£m)	10	11	+57%
Waste management GVA (£m)	258	221	+6%
Worcestershire GVA (£m)	12,727	13,314	+18%
% contribution from minerals	0.08%	0.08%	+0.02%
% contribution from waste management	2.0%	1.7%	-0.1%

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

3.207 The GVA from waste management and minerals is only a small part of Worcestershire's GVA, but this increased between 2016 and 2017. Furthermore the minerals sector continues to grow, with a 57% growth between 2016 and 2017 compared to an 18% growth in the overall Worcestershire economy in the same timeframe. The contribution that the minerals sector makes towards the overall GVA for Worcestershire has increased from 0.06% in 2013 to 0.08% in 2017. In regard to waste management, the sector continues to provide a steady and valuable contribution to the wider Worcestershire economy.

Growth with Prosperity for All: Likely Evolution without the plan

3.208 Uncertainty over the economy, including due to Brexit and post-Covid recovery, means it is difficult to predict how Worcestershire's average income may change.

3.209 The outcome of Brexit negotiations and post-Covid recovery will most likely have an impact on employment and unemployment rates in Worcestershire; however this is uncertain. at this time. Similarly, the likely evolution of GVA is unclear at this stage, but GVA from the sector appears to be growing. However, the Worcestershire Local Enterprise Partnership Evidence Base [\[See reference 121\]](#) states that economic forecasts from 2019 suggest that, despite growth in GVA, the gap between Worcestershire's productivity and the national average is expected to increase over the next 20 years.

Growth with Prosperity for All: Role of Site Allocations DPD

3.210 Minerals development can provide skilled jobs within the county and help to increase average household income. A high-quality natural environment, including a high-quality landscape, has been demonstrated to attract businesses and employees to an area. Although mineral operations do not tend

to have high levels of employment, the Site Allocations DPD, through requiring high-quality restoration of minerals sites, can help to contribute to ensuring the right conditions for attracting investment.

3.211 The Site Allocations DPD can help to continue the upward trend in GDP arising from mineral and waste sectors through guiding new development to bring wealth into Worcestershire.

Population

Population: Baseline

3.212 Population figures taken from the mid-year estimates for the county are presented here [See reference 122]. The 2020 mid-year estimates were released in June 2020 and are presented in Table 3.30. The 2020 mid-year estimate for the county was 601,113. This compares with the 2009 mid-year estimate of 556,500, the 2010 mid-year estimate of 557,400 and the 2016 mid-year estimate of 583,100. The population of Worcestershire is tending to increase, at an average rate of 1,640 per annum over this 11-year period.

Table 3.30: ONS mid 2020 population estimates

Area	Total population
Bromsgrove	100,513
Malvern Hills	79,657
Redditch	85,124
Worcester	102,158
Wychavon	131,414
Wyre Forest	102,247

Area	Total population
Worcestershire	601,113

3.213 Latest population projections shown in Figure 3.12 and Table 3.31 show that the population and therefore number of households in Worcestershire is expected to increase over the plan period [See reference 123].

Figure 3.12: Projected total persons in Worcestershire 2019 – 2043

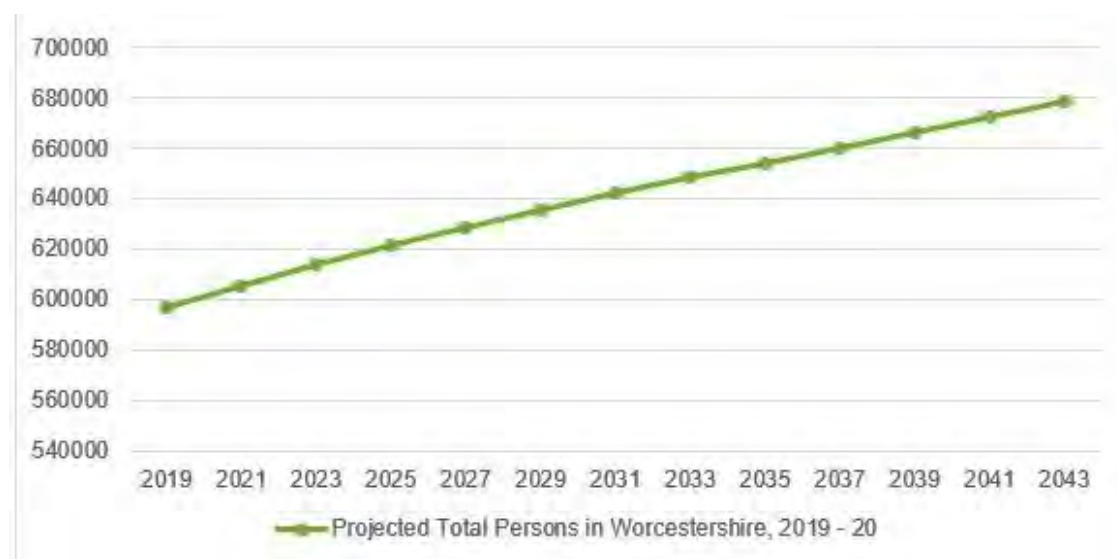


Table 3.31: Household projection by district (thousands)

Area	2014	2039
Bromsgrove	38	45
Malvern Hills	33	39
Redditch	35	38
Worcester	43	51
Wychavon	51	59

Area	2014	2039
Wyre Forest	44	48

3.214 It is noted that mineral sites have potential to attract anti-social behaviour if not secured well in operation and once restored, and such issues have been experienced in other counties. However, given that minerals sites tend to be located away from urban centres, the risk of trespassing and other urban edge effects is considered to be low. In addition, the locations of specific sites and preferred areas will not affect crime and the fear of crime.

Population: Likely evolution without the plan

3.215 The population and therefore number of households in Worcestershire is expected to increase over the timeframe of the Site Allocations DPD. According to the BIS report referred to below [See reference 124], this population increase will lead to “more competition for land use and more demand for mineral-based products, particularly construction minerals for housing and associated infrastructure”. The BIS report estimates that an average house needs 400 tonnes of aggregate. Across Worcestershire, the increase in households between 2013 and 2033 would be 38,000, equating to an aggregate requirement of 15,200,000 tonnes. This is before any associated business and infrastructure development which will accompany the new homes.

Population: Role of Site Allocations DPD

3.216 The Site Allocations DPD has a major role to play in supporting Worcestershire’s growing population by ensuring sufficient minerals production to allow the homes, offices, factories, commercial and leisure buildings and attendant infrastructure to be built.

Key sustainability issues

3.217 Identification of the key sustainability issues and consideration of how these issues might develop over time if the Site Allocations DPD is not implemented, helps to meet the requirements of Schedule 2 of the SEA Regulations to provide information on the following (numbering relates to the specific numbered list in Schedule 2):

(2) “the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan; and any existing environmental problems which are relevant to the plan.”

3.218 Drawing from the baseline data and trends identified in the sections above, the key sustainability issues in Worcestershire (including environmental problems as required by the SEA Regulations) are set out below for each sustainability topic discussed earlier in this chapter.

■ Landscape

- The condition of the landscape in Worcestershire has been identified as good. However, the views from the Cotswolds and Malvern Hills AONBs are sensitive to development up to a range of around 4.5km. Minerals development proposals may result in adverse impacts on landscape quality if they fail to take consideration of landscape context.

■ Biodiversity and geodiversity

- Dixton Wood SAC, River Wye SAC, Downton Gorge SAC and Walmore Common SPA are currently in unfavourable condition. Condition of Local Sites in Worcestershire is poor, with only 31% under appropriate management. Whilst minerals extraction may cause disturbance to local habitats, there is potential for the restoration of minerals sites to deliver biodiversity net gains.

■ Cultural heritage, architecture and archaeology

- The total heritage assets at risk in Worcestershire has remained relatively stable during the past decade, compared to a steady decline in the West Midlands as a whole. Mineral development proposals may result in adverse impacts on the setting of local heritage assets if they do not take consideration of local historical context.
- Material assets
 - Worcestershire has a large quantity of high-quality agricultural land, which could be threatened as more greenfield land is required for development (including minerals extraction).
- Natural resources (including water and air quality)
 - Worcestershire contains seven AQMAs, which includes the whole of Worcester City. Mineral sites may have the potential to increase traffic through these AQMAs.
 - Few of the water bodies within the management catchments that overlap with Worcestershire achieve good ecological status. The situation is particularly severe in the Severn Middle Worcestershire Management catchment, where no water bodies achieve good status. Minerals extraction may contribute to further deterioration of water quality.
 - Groundwater around Kidderminster and Stourport is at poor quantitative status and at risk of deterioration. Minerals development should avoid increasing pressure on this water resource.
- Climate change
 - CO₂ emissions in Worcestershire have decreased at a slower rate than the national level in the past decade. Therefore, it will be necessary to ensure that any minerals development minimises its contribution to emissions.
- Flooding
 - Flooding risk may increase due to changes in precipitation caused by climate change. However, some minerals operations are compatible in areas at risk of flooding and can provide opportunities to help with flood storage.

- Access to green space
 - Minerals development may temporarily prevent or alter access to green spaces, public rights of way or other access routes.
- Health
 - Health in Worcestershire is generally recorded as good. However, the Covid-19 pandemic and the subsequent economic recession may lead to mental health issues. Access to green space and the natural environment can reduce stress levels and encourage people to become more active, helping to tackle obesity, coronary heart disease and mental health problems. The restoration of mineral sites may be beneficial in this regard due to the potential for new areas of green space for local residents.
- Waste
 - In 2016 the amount of inert waste landfilled in Worcestershire was 317,686 tonnes in 2016 and 246,990 tonnes in 2017, across 5 sites, leading to a cumulative 1,045,677 tonnes of inert waste landfilled in the country since 2009. This is approximately 18% above the projections made in the Waste Core Strategy. Worcestershire does not have any rail depots to import and export minerals (including inert waste) and therefore all such transport takes place by road.
- Transport
 - Overall CO₂ emissions from road transport in Worcestershire and each district have recently increased (a decrease was noticed between 2017 – 2018 but it is too soon to determine a new trend). Minerals transportation will contribute to overall traffic levels and emissions.
- Growth and prosperity for all
 - The employment rate in Worcestershire is better than both the national and regional averages and the minerals sectors seem to continue to be growing. Minerals development can help provide jobs directly and supports other sectors through provision of raw materials.

Chapter 3 Baseline Information

- Overall, Worcestershire is a less deprived area, however the county has pockets of deprivation especially in Redditch, Wyre Forest and the central and north eastern areas of Worcester city.
- Population
 - Total population and therefore the number of households is projected to increase during the next decade in Worcestershire, and therefore there is a need for adequate aggregate supply to build homes.

Chapter 4

SA Framework

4.1 The development of a set of SA objectives (known as the SA Framework) is a recognised way in which the likely environmental and sustainability effects of a plan can be described, analysed and compared. The SA of the Site Allocations DPD is based on the SA framework developed for the MLP (as presented in the SA of the Worcestershire MLP Publication Version (2019)), to aid consistency and read-across between the SA outputs for both development plan documents. The MLP SA framework was developed taking into account the requirements of the SEA Regulations, the key policies and key sustainability issues identified for the MLP and comments received through consultation on the SA of the MLP. However, the MLP SA framework has been reviewed to take into account the updated baseline and key issues now identified in this Scoping report for the Site Allocations DPD, as well as the likely influence of the Site Allocations DPD on the various sustainability issues (see Chapter 3). In particular, some of the SA objectives from the MLP SA framework have been scoped out as they were generally not found to have effects from the MLP, particularly with regards to areas of search, and are also not likely to have effects from the more focused Site Allocations DPD.

4.2 The SA framework proposed for the Site Allocations DPD below also demonstrates how the SA objectives address the topics required in the SEA Regulations [See reference 125]. The SA framework for the Site Allocations DPD is set out in Table 4.1 and a description and explanation of changes from the MLP SA framework follows.

Table 4.1: SA framework for the Site Allocations DPD

Reference	SA Objective	SEA topic(s) addressed
1: Landscape	Safeguard and strengthen landscape character and quality	Landscape

Reference	SA Objective	SEA topic(s) addressed
	and minimise negative visual impact.	
2: Biodiversity and geodiversity	Conserve and enhance Worcestershire's biodiversity and geodiversity.	Biodiversity Flora Fauna
3: Cultural heritage, architecture and archaeology	Conserve and enhance the historic environment and deliver well-designed and resource-efficient development which respects local character and distinctiveness.	Cultural heritage, including architectural and archaeological heritage
4: Material assets	Ensure efficient use of land through safeguarding best and most versatile agricultural land, land of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings.	Material assets Soil
5: Water quality	Protect and enhance water quality.	Water
6: Air quality	Protect and enhance air quality.	Air
7: 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.	Climatic factors
8: 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.	Water Climatic factors
9: Access to green space	Improve the quality of, and equitable access to, open space/green infrastructure and public rights of way.	Material assets Population

Reference	SA Objective	SEA topic(s) addressed
10: Health and amenity	Improve the health and well-being of the population and reduce inequalities in health.	Human health
11: Waste	Manage waste in accordance with the waste hierarchy: 1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal.	Material assets
12: Traffic and transport	Reduce the need to travel and move towards more sustainable travel patterns.	Material assets Climatic factors Air
13: Growth and prosperity for all	Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural.	Material assets Population
14: Sustainable use of minerals	Safeguard mineral resources from loss by permanent sterilisation.	Material assets

4.3 The following SA objectives were included in the SA Framework for the SA of the Worcestershire Minerals Local Plan, but have been scoped out of the SA for the Mineral Site Allocations DPD:

- SA objective 14: Participation by all - The locations of specific sites and preferred areas will not affect the ability of communities to participate in decisions regarding minerals development.
- SA objective 15: Technology, innovation and inward investment - The locations of specific sites and preferred areas will not affect new technologies and innovation. In addition, data on the locations of sites for innovative technologies (e.g. solar farms or other resource efficient technology) is not available.
- SA objective 16: Population (skills and education) - Although exposure of geological features through minerals extraction can provide research and education opportunities, the potential to provide such educational opportunities is not dependent on the location of mineral workings. The

locations of specific sites and preferred areas will not affect skills and education.

- SA objective 17: Population (crime and fear of crime) - The locations of specific sites and preferred areas will not affect crime and the fear of crime.

4.4 Further revisions to the SA framework have been made as described below:

- Reference to mineral safeguarding has been removed from SA objective 4: material assets, to avoid duplication with SA objective 14: sustainable use of minerals (see below). The 'Material assets' SA objective for the MLP included 'whilst safeguarding open space/green infrastructure' at the end of the objective. This has been removed to avoid duplication with SA objective 9: access to green space (see below).
- The 'Cultural heritage, architecture and archaeology' SA objective for the MLP was previously worded 'Preserve and enhance...'. The word 'preserve' has been replaced with 'conserve', as this is considered to imply more active management (where needed) than 'preserve'.
- The 'Natural resources' SA objective for the MLP covering air and water quality has been split into two separate objectives (5 and 6) addressing air quality and water quality, as these are separate topics in the SEA Regulations.
- SA objective 9: access to green space is an update of MLP SA objective 8: access to services. The focus has been shifted to green space only, as the DPD is not expected to affect access to other services and facilities, as explained in Table 3.1.
- SA objective 14: sustainable use of minerals, is equivalent to the 'Provision of housing' SA objective for the MLP. The key focus of the 'Provision of housing' MLP SA objective was potential for conflicting land uses and provision of materials for housing construction. The DPD will not directly influence housing and the issue of conflicting land use is applicable to many types of built development. As such, it was considered more appropriate for this objective to consider minerals safeguarding more

generally. Reference to mineral safeguarding has been removed from SA objective 4: material assets, to avoid duplication.

Using the SA Framework

4.5 The findings of the SA will be presented as colour-coded symbols showing the effect for each policy or site option against each of the SA objectives along with a concise justification for the effect identified. The use of colour coding and symbols allows for likely significant effects (both positive and negative) to be easily identified, as shown in Table 4.2 below.

Table 4.2: Key to symbols and colour coding to be used in the SA

Colour coded symbols	Description
++	Significant positive effect likely
++/-	Mixed significant positive and minor negative effects likely
+	Minor positive effect
+/-	Mixed minor effects likely
-	Minor negative effect likely
--/+	Mixed significant negative and minor positive effects likely
--	Significant negative effect likely
0	No effect likely
?	Likely effect uncertain

4.6 The likely effects of options and policies need to be determined and their significance assessed, which inevitably requires a series of judgments to be made. The appraisal will attempt to differentiate between the most significant effects and other more minor effects through the use of the symbols shown above. The dividing line in making a decision about the significance of an effect is often quite small. Where either (++) or (--) will be used to distinguish significant effects from more minor effects (+ or -) this is because the effect of an option or policy on the SA objective in question is considered to be of such magnitude that it will have a noticeable and measurable effect taking into account other factors that may influence the achievement of that objective. Note that a significant positive impact against an SA objective does not imply that the DPD 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 DPD, 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).

4.7 There is an element of uncertainty in all assessments, as they are predictions of effects the DPD is likely to have. Where this uncertainty is considered to be particularly significant, a question mark will be added to the relevant symbol (e.g. +? or -?) and the symbol will be colour coded as per the potential positive, negligible or negative effect (e.g. green, blue, orange, etc.).

Reasonable alternatives

4.8 The SA must appraise not only the preferred options for inclusion in the DPD but 'reasonable alternatives' to these options. This implies that alternatives that are not reasonable do not need to be subject to appraisal. Part (b) of Regulation 12(2) notes that reasonable alternatives will take into account the objectives of the DPD, as well as its geographical scope. Therefore, alternatives that do not meet the objectives of the DPD as set out in the MLP, or are outside the DPD area are unlikely to be reasonable.

4.9 The objectives, policies and site allocations to be considered for inclusion within the DPD are in the process of being identified and reviewed. The Council's reasons for selecting the alternatives to be included in the DPD will be reported at a later stage in the SA process.

Assumptions

4.10 Brief commentaries on how the appraisal will approach each of the SA objectives in the SA framework are set out in Appendix B, together with indicative thresholds to be used as decision-making criteria to appraise each of the specific sites, preferred areas, and their alternatives. These thresholds and decision-making criteria will enable a consistent approach to the assessment of likely effects for the site options. These assumptions were developed so that, where possible, quantitative data can be used to appraise the mineral site options. 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.

4.11 The SA objectives and accompanying questions set out in the SA Framework and the site assessment criteria and assumptions set out in Appendix B may be subject to change following feedback collated during consultation on this SA Scoping Report with the three statutory consultation bodies (Environment Agency, Historic England and Natural England) under Regulation 12(5) of the SEA Regulations.

Chapter 5

Consultation and Next Steps

5.1 In order to meet the requirements of the SEA Regulations, the views of the three statutory consultees (Environment Agency, Historic England and Natural England) will be sought in relation to the scope and level of detail to be included in the SA Report. A summary of responses and how they have been addressed will be included in future SA Reports.

5.2 As outlined in the introduction, the consultees are in particular requested to consider:

1. Whether the scope of the SA is appropriate for considering the role of the Mineral Site Allocations DPD.
2. Whether there are any additional plans, policies or programmes that are relevant to the SA policy context that should be included.
3. Whether the baseline information provided is robust and comprehensive, and provides a suitable baseline for the SA of the Mineral Site Allocations DPD.
4. Whether there are any additional sustainability issues relevant to the Mineral Site Allocations DPD that should be included.
5. Whether the SA Framework is appropriate and includes a suitable set of SA objectives and site-based assumptions for assessing the effects of the options included within the Mineral Site Allocations DPD and reasonable alternatives.

5.3 Responses from consultees will be reviewed and appropriate amendments made to the detail contained in the Scoping Report, including the baseline,

Chapter 5 Consultation and Next Steps

policy context and SA Framework where necessary. Any updates to this detail will be presented at the next stage of the SA process.

5.4 As the DPD is drafted, it will be subject to SA using the SA Framework. A full SA report (incorporating the later stages of the SA process) will then be produced and made available to other stakeholders and the general public for wider consultation alongside the emerging DPD.

LUC

May 2021

Appendix A

Review of Relevant Plans and Programmes

International

Table A.1: Relevant International Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
Paris Agreement to the UNFCCC (2015)	The main aim of the Paris Agreement centres on keeping global temperature rise in this century to less than 2°C above pre-industrial levels. Under Article 2: to hold “the increase in global average temperature to well below 2 degrees C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 degrees C above pre-industrial levels” and to increase “the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions in a manner that does not threaten food production”. Under Article 5: “Parties should take action to conserve and enhance as appropriate, sinks and reservoirs of greenhouse gases...including forests”.	The DPD should support delivery of the target by minimising greenhouse gas emissions, for example through efficient transportation of minerals and use of low carbon and renewable technology. The DPD should also consider ways to adapt to climate change and protect food production, for example through protection of agricultural land.	The SA framework should include objectives to minimise greenhouse gas emissions, adapt to the effects of climate change and protect agricultural land.
Council of Europe (1950) European Convention on Human Rights	The Convention sets out fundamental human rights on a wide range of topics, many of which are beyond the scope of the DPD. Article 1 of the Convention sets out the right to peaceful enjoyment of property, which could have implications for protection of amenity, and by extension	The DPD should not infringe on any of the rights set out in the Convention and can act positively to protect residential amenity and health of the	The SA framework should include an objective to protect health and amenity. If the need for an Equalities Impact

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>health, particularly for residents living near mineral sites. Article 14 is also particularly relevant in terms of equalities, as it prohibits discrimination based “sex, race, colour, language, religion, political or other opinions, national or social origin, association with a national minority, property, birth or other status”.</p>	<p>population. The DPD should be screened for the need for Equalities Impact Assessment.</p>	<p>Assessment is established, the SA should take account of the results of this.</p>
<p>European Landscape Convention (Florence Convention) (2000)</p>	<p>Promotes landscape protection, management and planning, and European co-operation on landscape issues.</p> <p>Highlights the importance of developing landscape policies dedicated to the protection, management and creation of landscapes, and establishing procedures for the general public and other stakeholders to participate in policy creation and implementation.</p>	<p>The Site Allocations DPD should seek to protect the landscape from harmful development, whilst recognising that some minerals operations will be temporary and could result in landscape benefits in the longer term. Full consideration should be given to the Worcestershire Landscape Character Assessment Supplementary Guidance and the Site Allocations DPD should direct applicants to this guidance.</p>	<p>The SA Framework should include a sustainability objective relating to landscape.</p>
<p>Convention for the Protection of the Architectural Heritage of Europe (The Granada</p>	<p>Reinforces and promotes policies for the conservation and enhancement of Europe's heritage, particularly in terms of built heritage.</p>	<p>The Site Allocations DPD should ensure that the historic environment is conserved and enhanced. Policies should guide development away from the most sensitive locations based on the significance of</p>	<p>The SA Framework should include an objective to protect and enhance the historic environment.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
Convention) (1985)		interest of architectural heritage. Where impacts on the historic environment are unavoidable, policies should require assessment and recording where appropriate.	
Convention on the Protection of the Archaeological Heritage (Valetta Convention) (1992)	<p>Updates the previous 1969 Convention and makes conservation and enhancement of archaeological heritage a goal of urban and regional planning policies. It is concerned in particular with arrangements to be made for co-operation among archaeologists and town and regional planners in order to ensure optimum conservation of archaeological heritage.</p> <p>Sets guidelines for funding excavation and research work and publication of findings. Also deals with public access and educational actions to develop public awareness of the value of archaeological heritage.</p>	<p>The Site Allocations DPD should ensure that the historic environment, including archaeology, is conserved and enhanced. Policies should guide development away from the most sensitive locations based on the significance of interest of archaeological heritage. Where appropriate, site-specific consideration should provide opportunities to enhance historic assets, including the condition, legibility and understanding of heritage assets and their setting, as well as integrate other green infrastructure components where appropriate. Where impacts on the historic environment are unavoidable, policies should</p>	<p>The SA Framework should include an objective to protect and enhance the historic environment and this includes consideration of archaeological heritage.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
		require assessment and recording where appropriate.	

National

Table A.2: Relevant National Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
MHCLG (2019) National Planning Policy Framework	<p>Sets out Government planning policy for England. The NPPF is underlain by the view that the purpose of the planning system is to contribute to the achievement of sustainable development. This is defined by three overarching objectives, which the NPPF clarifies are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). These are:</p> <ul style="list-style-type: none"> ■ “An economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation 	The Site Allocations DPD will identify specific sites and preferred areas for minerals development, and define criteria against which minerals applications can be determined, including their likely impact on natural and historic environment and human health (including impacts from noise, dust, and vibration).	<p>The SA will support the DPD in achieving sustainable development, as the role of the SA is to ensure that the social, economic and environmental impacts of minerals extraction are fully considered.</p> <p>The SA framework should include objectives on protecting and enhancing</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>and improved productivity; and by identifying and coordinating the provision of infrastructure;</p> <ul style="list-style-type: none"> ■ A social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities’ health, social and cultural well-being; and ■ An environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.” <p>The NPPF clarifies that planning policies and decisions should play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area.</p> <p>The NPPF sets out specific guidance on planning for mineral extraction in plan making and the application process within section 17, paragraphs 203 to 211: ‘facilitating the sustainable use of minerals’. This section highlights the need</p>	<p>The Site Allocations DPD should plan for mineral reserves in accordance with the NPPF and should be subject to liaison with other authorities in preparing the plan.</p>	<p>the historic and natural environments and human health. The SA framework should also include an objective to consider the impact of minerals development on the economy.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>for minerals planning, as minerals are required for infrastructure, buildings, energy and goods, but are a finite natural resource, and can only be worked where they are found.</p> <p>Relevant requirements for the Site Allocations DPD set out in the NPPF include the requirements for planning policies to:</p> <ul style="list-style-type: none"> ■ “Provide for the extraction of mineral resources of local and national importance, but not identify new sites or extensions to existing sites for peat extraction; ■ So far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously;” ■ “Set out criteria or requirements to ensure that permitted and proposed operations do not have unacceptable adverse impacts on the natural and historic environment or human health, taking into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality; ■ When developing noise limits, recognise that some noisy short-term activities, which may otherwise be regarded as unacceptable, are unavoidable to facilitate minerals extraction; and 		

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Ensure that worked land is reclaimed at the earliest opportunity, taking account of aviation safety, and that high quality restoration and aftercare of mineral sites takes place.” <p>The NPPF also states that, in considering proposals for mineral extraction, minerals planning authorities should give weight to the benefits of mineral extraction, such as economic benefits and use of building stone to repair heritage assets. It also sets out high level environmental principles, such as focusing on working minerals outside of national environmental assets, such as National Parks, AONBs, World Heritage Sites, scheduled monuments and conservation areas. It seeks to ensure minerals development does not adversely affect the natural or historic environment, human health and amenity and that non-minerals development does not constrain future minerals working.</p> <p>The NPPF also sets out how minerals planning authorities should plan for a steady and adequate supply of aggregates, for example by making provision for minerals working through allocation of specific sites and preferred areas, identify need for minerals provision and maintaining landbanks of sand and gravel and crushed rock and facilitating competition in the market.</p> <p>The NPPF requires minerals planning authorities to plan for a steady and adequate supply of industrial minerals, including by co-operating with other authorities to ensure adequate</p>		

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	provision of industrial minerals and maintaining a stock of permitted reserves.		
MHCLG (live guidance) Planning Practice Guidance,	<p>The Minerals section of the PPG (first published in 2014 and partially updated in 2015) expands on the 'Facilitating the sustainable use of minerals' section of the NPPF. With regards to minerals development, it provides guidance on the following factors:</p> <ul style="list-style-type: none"> ■ Minerals safeguarding, planning for minerals extraction; ■ Assessing environmental impacts from minerals extraction; ■ Charging for site visits; ■ Restoration and aftercare of minerals site; ■ Planning for aggregate minerals; ■ Planning for industrial minerals; ■ Planning for hydrocarbon extraction; ■ Planning for coal extraction; ■ Minerals planning orders; and ■ Review of minerals planning conditions. <p>In addition to providing additional guidance on minerals planning, the PPG provides guidance on a range of other</p>	<p>The Site Allocations DPD should take full account of the Planning Practice Guidance in developing policy in relation to each of these aspects of relevance and should define criteria against which minerals applications can be determined, including:</p> <ul style="list-style-type: none"> ■ Impacts on the natural and historic environment or human health, including from noise, dust, and vibration visual intrusion, traffic, tip- and quarry-slope stability, differential settlement of quarry backfill, mining subsidence, increased flood risk, impacts on the flow and quantity of surface and groundwater and migration of contamination from the site. 	<p>The SA framework will include objectives to assess key issues relating to sustainable mineral extraction, such as Landscape, Biodiversity and geodiversity, Cultural heritage, architecture and archaeology, Material assets, Water quality, Air quality, Waste.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>relevant areas, particularly in terms of environmental considerations. These include:</p> <ul style="list-style-type: none"> ■ Air Quality (2019): Recognises that all development plans can influence air quality. Aims to improve air quality, particularly in air quality management areas, Clean Air Zones and other areas including sensitive habitats or designated sites of importance for biodiversity. ■ Climate change (2019): . Aims to minimise greenhouse gas emissions and increase resilience to the impacts of climate change. ■ Flood risk and coastal change (2014): Details steps to be followed in minimising flood risk through assessing the risk, avoiding flood risk, and then managing and mitigating flood risk. ■ Green Belt (2019): Sets out factors to be considered when considering the impact of development on the Green Belt, including potential effects on openness and how any loss will be compensated for. ■ Historic Environment (2019): Aims to conserve and enhance the historic environment, recognising the risk of undiscovered archaeological remains and promoting enjoyment of the historic environment. Also adds detail regarding the assessment and importance of significance of heritage assets. 		

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Land Stability (2019): Aims to ensure development is suitable to its ground conditions and avoids risks caused by unstable land or subsidence. The PPG notes that for development on land previously affected by mining activity, this may mean prior extraction of any remaining mineral resource. Remediation techniques also need to be appropriate to the intended future land use. ■ Light pollution (2019): Aims to manage effects of new artificial lighting and sensitivity of development to lighting to reduce annoyance to people, and avoid or minimise adverse effects on wildlife and landscapes. ■ Waste (2015): Aims to drive waste management up the Waste Hierarchy. ■ Natural Environment (2019): Aims to protect and enhance the natural environment by protecting the most valuable agricultural land and soil resources, and recognising that some brownfield land is of high environmental value, particularly in terms of biodiversity (especially open mosaic habitat). This part of the PPG also promotes green and blue infrastructure (GI) protection and enhancement, recognising the wide range of social, economic and environmental functions and impacts of GI. This section also aims to conserve and enhance biodiversity, geodiversity, ecosystems and landscape character. 		

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Noise (2019): Aims to ensure generation of and sensitivity to noise is considered, assessed (where necessary) and managed in new development. Sets out general types of mitigation to manage noise impacts. ■ Open space, sports and recreation facilities, public rights of way and local green space (2014): Gives key advice on open space, sports and recreation facilities, public rights of way and the designation of Local Green Space. Recognises the social, health, ecological and landscape benefits of all types of open space provision. Requires local authorities to assess and plan for open space, sport and recreation needs and maintain and protect public rights of way. ■ Renewable and low carbon energy (2015): Aims to increase the amount of energy generated from renewable and low-carbon technologies. ■ Water supply, wastewater and water quality (2019): Aims to protect, enhance and restore water quality. Also aims to ensure adequate supply of water and water infrastructure, including for wastewater. 		
DEFRA (2005) Securing the Future: UK Sustainable	This document sets out four broad priorities to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life for future generations:	The Site Allocations DPD should embody sustainability principles, and recognise the valuable contribution that minerals sites can make to	The SA will support the DPD in achieving sustainable development and working towards the priorities set out above,

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
Development Strategy	<ul style="list-style-type: none"> ■ Sustainable consumption and production – working towards achieving more with less; ■ Natural resource protection and environmental enhancement; ■ From local to global, building sustainable communities; and ■ Climate change and energy. <p>The document sets out indicators relating to these priorities to give an overview of sustainable development and priority areas in the UK.</p>	society, the economy and the environment, both during operational phases and following restoration, whilst protecting environmental and human health.	as the role of the SA is to ensure that the social, economic and environmental impacts of minerals extraction are fully considered. In particular, the SA framework should include objectives relating to protection of natural resources, protection and enhancement of environmental assets and climate change and energy.
UK Government (2011) Localism Act	<p>The Localism Act takes power from central government and hands it back to local authorities and communities.</p> <p>Community organisations have the chance to bid to take over land and buildings that are important to them.</p> <p>Local communities can shape new development through Neighbourhood Plans. Once written, the plan will be independently examined and put to a referendum of local people for approval.</p> <p>Neighbourhood Plans will enable local people to ensure there are enough homes in their area by providing planning</p>	The Site Allocations DPD process should seek to engage Parish Councils in consultation. Local communities should have adequate opportunities to become involved with the plan as it develops through a variety of consultation methods, including those aimed at hard-to-reach groups.	The SA will be subject to consultation alongside the development of the DPD to ensure local stakeholders have an opportunity to consider and comment on the SA.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>permission for homes in community ownership (particularly through the Community Right to Build).</p> <p>The 'general power of competence' gives local authorities the legal capacity to do anything an individual can do that is not specifically prohibited.</p>		
<p>DCLG (2009) National and regional guidelines for aggregates provision in England 2005-2020</p>	<p>The Guidelines should be used in preparing and revising minerals plans to inform provision of aggregates through the planning system in the English regions and for individual mineral planning authorities.</p> <p>Worcestershire falls within the West Midlands, for which the Regional Guidelines for Aggregates Provision 2005-2020, published in June 2009, apportion 165 million tonnes of land-won sand & gravel and 82 million tonnes of land-won crushed rock, with assumptions of 100 million tonnes of alternative materials and 23 million tonnes of net imports to England. Further disaggregation to sub-regional areas is the responsibility of 'responsible regional authorities', taking into account advice from the mineral planning authorities (MPAs) and the aggregates working party (AWP).</p>	<p>The Site Allocations DPD should inform the allocation of sites for aggregate resources including sand, gravel, and crushed rock in order to enable the delivery of a sufficient supply.</p>	<p>The role of the SA is to assess the likely impacts of the DPD, including allocated and reasonable alternative minerals sites, to enable development of a sustainable DPD.</p>
<p>MHCLG (2014) National Planning Policy for Waste</p>	<p>The NPPW sets out detailed waste planning policies for England. Whilst it primarily sets policies determining waste planning applications, it also includes considerations for non-waste development, including:</p> <ul style="list-style-type: none"> ■ The likely impact of proposed, non-waste related development on existing waste management facilities, and 	<p>The Site Allocations DPD should encourage or require site waste management plans and requirements for waste minimisation during any construction of plant and buildings. The location of</p>	<p>The SA Framework should include a sustainability objective relating to waste.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>on sites and areas allocated for waste management, is acceptable and does not prejudice the implementation of the waste hierarchy and/or the efficient operation of such facilities;</p> <ul style="list-style-type: none"> ■ New, non-waste development makes sufficient provision for waste management and promotes good design to secure the integration of waste management facilities with the rest of the development and, in less developed areas, with the local landscape; and, ■ The handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities, and minimises off-site disposal. 	<p>mineral sites allocated through the DPD should avoid disturbance of the efficient operation of existing waste management facilities.</p>	
<p>DEFRA (2021) Waste Management Plan for England</p>	<p>Provides an analysis of the current waste management situation in England and evaluates how it will fulfil the requirements of the Waste (England and Wales) Regulations 2011 and changes made to these requirements by the Waste (Circular Economy) (Amendment) Regulations 2020. The Plan also supports the implementation of the objectives and provisions of the 25 Year Environment Plan, Resources and Waste Strategy, and the National Planning Policy for Waste.</p> <p>At the local authority level, the Waste Management Plan notes that waste planning authorities (including Worcestershire County Council) are responsible for producing local waste management plans that cover the land use planning aspect of waste management for their areas.</p>	<p>The DPD should encourage or require site waste management plans and requirements for waste minimisation during any construction of plant and buildings.</p>	<p>The SA Framework should include a sustainability objective relating to sustainable waste management.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
<p>Historic England (2016) Sustainability Appraisal and Strategic Environmental Assessment, Historic England Advice Note 8</p>	<p>This note seeks to provide advice on historic environment considerations as part of the Sustainability Appraisal/Strategic Environmental Assessment process. This document is aimed at all relevant local planning authorities, neighbourhood groups, developers, consultants, landowners and other interested parties.</p> <p>The purpose of this Historic England advice note is to support all those involved in assessing the effects of certain plans on the historic environment. It offers advice on heritage considerations during the SA and SEA process, and on implementing historic environment legislation, the relevant policy in the NPPF and the related guidance given in the PPG as well as the Marine Policy Statement.</p>	<p>The Site Allocations DPD should be informed by Historic England advice and ensure Historic England are fully consulted as the Site Allocations DPD develops.</p>	<p>The Site Allocations DPD SA framework should include specific consideration of the historic environment and the subsequent report should include demonstration of the significance of heritage assets, potential impacts, mitigation measures and optimisation of any benefits to the significance of heritage assets and their settings.</p>
<p>UK Government (1990) Planning (Listed Buildings and Conservation Areas) Act (as amended)</p>	<p>Governs special controls in respect of buildings and areas of special architectural or historic interest. Any alteration, extension or demolition of a listed building in a way that affects its character as a building of special interest requires Listed Building Consent.</p>	<p>The Site Allocations DPD should ensure that Listed Buildings and Conservation Areas are conserved and enhanced. This includes avoiding adverse impacts through location and design policies, and providing for the materials necessary to ensure the continued maintenance, repair and extension of historic</p>	<p>The SA Framework should include a sustainability objective relating to the historic environment, including consideration of listed buildings and conservation areas.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
		buildings to preserve character and the local vernacular.	
UK Government (1979) Ancient Monuments and Archaeological Areas Act	<p>The Act seeks to protect the archaeological heritage of England, Wales and Scotland. Under the Act a monument which has been scheduled is protected against any disturbance including works resulting in damage or destruction of a scheduled monument, which could include mineral workings.</p> <p>Permission must be obtained for any work which might affect a monument above or below ground, as well as archaeological sites of importance or historic significance. English Heritage gives advice to the Government on each application. In assessing an application, the Secretary of State will try to ensure any works on protected sites are beneficial to the site or are essential for its long term sustainability.</p>	The DPD should seek to protect ancient monuments and archaeology from disturbance and damage, which could occur as a result of minerals development coinciding with, or near to, a scheduled monument or site of archaeological importance.	The SA should consider the potential effects of the DPD on ancient monuments and archaeology, via the inclusion of an SA objective relating to the historic environment.
Historic England (2020) Minerals Extraction and Archaeology: Historic England Advice Note 13	<p>Historic England provides guidance specifically for dealing with archaeological remains as part of mineral development through the planning process. The principal purpose of this Advice Note is to provide clear and practical advice on the archaeological evaluation of mineral development sites. The Advice Note seeks to ensure that:</p> <ul style="list-style-type: none"> ■ informed decisions are made regarding the level of archaeological assessment and understanding needed at each stage of the planning process 	The Site Allocations DPD should ensure that the Advice Note is taken into account in its development.	The SA Framework should include a sustainability objective that considers the impacts on the historic environment and archaeology.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ mineral planning authorities have up-to-date evidence about the historic environment sufficient to inform plan-making ■ mineral operators provide sufficient archaeological information to support a minerals planning application ■ the full range of up-to-date and appropriate investigative techniques is considered, driven by a thorough desk-based assessment that takes account of geomorphology and Quaternary geology and its archaeological associations; the Quaternary covers the most recent period of geological time during which humans evolved, encompassing all archaeology from the Palaeolithic onwards ■ there is a consistency of approach within and between mineral planning authorities, and that such approach is proportionate to the heritage significance of the site and the significance of affected heritage assets ■ archaeological understanding is demonstrably advanced by archaeological works undertaken and opportunities are taken to share the findings with the public 		
UK Government (2020) The Environment Bill	The Environment Bill is an emerging piece of legislation, which sets out how the government plans to protect and improve the natural environment in the UK, to complement the UKs Net Zero target.	The Site Allocations DPD should support the waste hierarchy (reduce, reuse, recycle, other recovery and disposal), resource efficiency,	The SA framework should include objectives that support the waste hierarchy, sustainable resource use,

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	The Bill will enable long-term, legally binding targets to be set for four priority areas including air quality, biodiversity, water and waste reduction and resource efficiency.	and should seek to improve air quality, water quality and biodiversity.	improvements to air quality, water quality and biodiversity.
UK Government (2000) The Countryside and Rights of Way Act	Emphasises the public's right of access to open country and common land and gives additional protection to Sites of Special Scientific Interest (SSSI).	The DPD should seek to protect public rights of way and access to common land and conserve and enhance SSSIs.	The SA Framework should include objectives relating to the protection of SSSIs (along with other biodiversity and geodiversity assets) and should consider how minerals sites link with and may impact on public rights of way.
UK Government (1981) Wildlife and Countryside Act (as amended)	The Act seeks to protect the countryside and wildlife, including requirements relating to nature conservation and public rights of way. The act sets out restrictions with regards to killing or taking wild animals, protecting certain mammals, and restricting the introduction, importing and exporting of certain animals and plants.	The Site Allocations DPD should ensure wildlife protection through policies to protect and enhance biodiversity, through careful siting of minerals development and through restoration requirements. Policies should also ensure that public rights of way are taken into account when locating and developing minerals sites.	The SA Framework should include sustainability objectives relating to conservation and enhancement of biodiversity and public rights of way.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
UK Government (1995) The Environment Act (as amended)	<p>Sites with planning permission(s) for the development consisting of the winning and working of minerals or involving the depositing of mineral waste ("minerals development") must be reviewed every 15 years and, where it is considered necessary, new conditions imposed to ensure that they remain up to date. It is noted that the minerals section of the PPG appears to update this with a more flexible approach, stating that "there is no fixed period when periodic reviews should take place so long as the first review is no earlier than 15 years after planning permission is granted or, in the case of an old permission, 15 years of the date of the initial review. Any further reviews should be at least 15 years after the date of the last review" (Paragraph: 192 Reference ID: 27-192-20140306).</p> <p>The Act sets out that compensation is payable if new conditions, other than restoration and aftercare conditions, restrict working rights. It is noted that the PPG adds more detail to this, clarifying that the applicant can claim compensation if any review of conditions differ from those submitted by the applicant or would unreasonably prejudice the economic viability or asset value of the site. The PPG also states that, in the case of a review of conditions that would impact working rights, the minerals planning authority should discuss the proposed conditions with the operator first.</p>	No role identified for the emerging DPD.	No role identified for the SA.
UK Government (2006) Natural	Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions.	The Site Allocations DPD should seek to protect and	The SA Framework should include a

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
Environment and Rural Communities Act	This is commonly referred to as the 'biodiversity duty'. The aim of the biodiversity duty is to raise the profile of biodiversity in England and Wales, so that the conservation of biodiversity becomes properly embedded in all relevant policies and decisions made by public authorities.	enhance biodiversity through policies to guide locations and operations to avoid adverse impacts, and to seek net gains from restoration.	sustainability objective that addresses biodiversity.
DEFRA (2018) A Green Future: Our 25 Year Plan to Improve the Environment	<p>Sets out goals for improving the environment within the next 25 years. It details how the Government will work with communities and businesses to leave the environment in a better state than it is presently. The Plan sets out overarching goals and targets for identified environmental benefits and pressures, including:</p> <p>Achieving clean air by reducing the emission of damaging air pollutants.</p> <p>Achieve clean water.</p> <p>Using resources from nature more sustainably and efficiently by maximising the value and benefits gained from resources.</p> <p>Conserve and enhance the beauty of the natural environment.</p> <p>Mitigating and adapting to climate change by reducing greenhouse gas emissions, including from land use and waste sectors.</p> <p>Minimise waste and manage materials at the end of their life to minimise the impact on the environment.</p>	Develop policies that encourage the protection and enhancement of the natural environment, including through sensitive siting of minerals development and through restoration requirements.	The SA Framework should include sustainability objectives that relate to the protection and enhancement of the natural environment, including air quality, water quality, natural resources, landscape, climate change and waste.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
UK Government (2017) The Conservation of Habitats and Species Regulations (as amended)	The Habitats Regulations seek to protect wildlife sites of international importance, including Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Ramsar sites, sites that have started the process of being designated as a SAC, SPA or Ramsar site and any compensatory habitat linked to these.	The emerging DPD will be subject to HRA and should locate development so as to avoid impacts on wildlife sites of international importance.	HRA and SA are separate legally required processes. However, the SA will take the HRA results into consideration, particularly when assessing likely significant effects on biodiversity.
Natural England and DEFRA (2014) Guidance on the Biodiversity Duty: Public Authority Duty to have Regard to Conserving Biodiversity	<p>The guidance is intended to assist local authorities in meeting the Biodiversity Duty. The conservation of biodiversity is highly dependent on the extent to which it is addressed in infrastructure and development projects and how well the planning process integrates biodiversity into planning and development control policies.</p> <p>Local authorities should be able to show their duty to have regard for conserving biodiversity if they have identified ways to integrate biodiversity when they:</p> <ul style="list-style-type: none"> ■ Develop policies and strategies and put them into practice; ■ Manage the planning system; ■ Manage land and buildings, woodlands and nature reserves, gardens, parks and public open space, community amenities e.g. sports grounds and cemeteries, 	The Site Allocations DPD should be informed by the guidance in seeking to protect and enhance biodiversity.	The SA Framework should include a sustainability objective that addresses biodiversity.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>waste and pollution, energy and water, wood and plant products;</p> <ul style="list-style-type: none"> ■ Develop infrastructure i.e. roads, buildings or flood defences; ■ Make decisions about procurement; and ■ Implement economic, environmental and social programmes. 		
DEFRA (2020) England Tree Strategy consultation	<p>This is an emerging document which will inform forestry policy through to the year 2050 by focusing on expanding, protecting and improving woodlands, and how trees and woodlands can connect people to nature, support the economy, combat climate change and recover biodiversity.</p> <p>Subject to consultation, which was carried out June to September 2020, the strategy will set out policies to expand tree cover, support woodland management and increase public engagement with trees and woodlands. It will also set out policy priorities to deliver an ambitious tree planting programme.</p>	<p>The Site Allocations DPD should recognise the value of woodland and tree cover and policies should seek to avoid any loss where practicable through location and design policies. The potential contribution of trees in restoration schemes should be explored and maximised.</p>	<p>The SA Framework should include sustainability objectives that relate to the protection and enhancement of woodlands and tree cover, such as Biodiversity.</p>
UK Government (2008) Climate Change Act (as amended)	<p>The Act aims to improve carbon management, helping the transition towards a low-carbon economy in the UK and to demonstrate UK leadership internationally. Key provisions of the Act include:</p> <ul style="list-style-type: none"> ■ At least an 80% cut in greenhouse gas emissions by 2050 and a reduction in emissions of at least 34% by 2020 	<p>The Site Allocations DPD should seek to ensure that carbon emissions arising from minerals development/transport are minimised through directing</p>	<p>The SA Framework should include a sustainability objective relating to minimising greenhouse gas emissions and traffic.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>(both against 1990 baseline) were the original legally binding targets. Note that the 2020 target has been exceeded, as total UK greenhouse gas emissions were around 48.8% lower in 2020 than 1990 [See reference 121]. New targets adopted in June 2019 require the UK to bring all greenhouse gas emissions to net zero by 2050;</p> <ul style="list-style-type: none"> ■ A carbon budgeting system that caps emissions over five-year periods; ■ Creation of the Committee on Climate Change; ■ Further measures to reduce emissions, including measures on biofuels; and ■ A requirement for the Government to report at least every five years on the risks to the UK of climate change, and to publish a programme setting out how these will be addressed. The Act also introduces powers for Government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks. 	<p>developments to sustainable locations where possible, such as minimising distance between minerals working and relevant markets and directing development to areas with existing or potential sustainable transport links.</p>	
<p>UK Government (2011) The Carbon Plan: Delivering our low carbon future</p>	<p>The Carbon Plan is a Government wide plan of action on climate change, including domestic and international activity. The Plan sets out a vision of a country powered by cleaner energy used more efficiently, with more secure energy supplies and more stable energy prices, benefitting from the jobs and growth that a low carbon economy will bring. The</p>	<p>The Site Allocations DPD should include policies that contribute towards achieving lower carbon emissions, such as siting minerals near relevant</p>	<p>The SA Framework should include sustainability objectives relating to reducing greenhouse gas emissions and</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>plan includes a range of sectoral plans and targets. Relevant to mineral extraction are:</p> <p>Securing the supply of low carbon energy, powered by a mix of renewable energy, nuclear power and Carbon Capture and Storage (CCS) technology.</p> <p>Reducing emissions from businesses and industry involved in agriculture, forestry and transport via efficient energy use and the transition to low carbon fuels and electric vehicles.</p> <p>Sustainable land management. The Plan recognises that land uses including agriculture and forestry have an important impact on carbon balances through absorption and sequestration and seeks to ensure that these land uses are managed accordingly.</p>	<p>markets and promoting low emission transport options.</p> <p>The DPD should also develop policies that encourage the protection and enhancement of the natural environment and sustainable land management, including through sensitive siting of minerals development and restoration requirements that maximise the benefits of efficient land use such as forestry and agriculture.</p>	<p>sustainable transport, as well as efficient land use.</p>
<p>UK Government (2010) Flood and Water Management Act</p>	<p>The Act addresses the threat of flooding and water scarcity. It defines unitary/county councils as lead local flood authorities for their area, but enables this role to be delegated to another risk management authority by agreement.</p> <p>The Act requires a lead local flood authority to develop, maintain, apply and monitor a strategy for local flood risk management in its area. The Act establishes a SuDS Approving Body (the “SAB”), with responsibility for approving proposed drainage systems in new developments/ redevelopments at county/unitary level. Approval must be given before the developer can commence construction.</p>	<p>The Site Allocations DPD should recognise that minerals working and processing is a 'less vulnerable' land use, and therefore development can be appropriate in Flood Zones 1, 2 and 3a. Sand and gravel working is classed as 'water compatible', and can be appropriately located in any of the above Flood Zones as well as in the functional flood plain (Flood Zone 3b). Policies</p>	<p>Ensure flooding objective with SA framework.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
		<p>should ensure that minerals operations do not increase the risk of flooding elsewhere. The Site Allocations DPD should be informed by the findings of an SFRA.</p>	
<p>DEFRA (2011) Water White Paper – Water for Life</p>	<p>The white paper seeks to protect England’s water resources, including rivers and lakes and water infrastructure, particularly in light of growing demand for water and therefore greater pressure on water resources. The objectives of the White Paper are to:</p> <ul style="list-style-type: none"> ■ Paint a clear vision of the future and create the conditions which enable the water sector and water users to prepare for it; ■ Deliver benefits across society through an ambitious agenda for improving water quality, working with local communities to make early improvements in the health of our rivers by reducing pollution and tackling unsustainable abstraction; ■ Work with water companies, regulators and other stakeholders to build understanding of the impact personal choices have on the water environment, water resources and costs; and ■ Set out roles and responsibilities – including where Government will take a stronger role in strategic direction 	<p>Ensure that site allocations and policies will support the efficient use of water, reduction of water pollution and tackling unsustainable abstraction.</p>	<p>Ensure that the SA framework includes sustainability objectives that relate to protecting and, where possible, improving water quality.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>setting and assessing resilience to future challenges, as well as clear expectations on the regulators.</p>		
<p>DEFRA (2019) Clean Air Strategy</p>	<p>The Clean Air Strategy 2019 informed the detailed National Air Pollution Control programme, published in March 2019. The Strategy sets out actions that are required from all parts of government and society to improve air quality by reducing pollution from a wide range of sources. These actions include:</p> <ul style="list-style-type: none"> ■ Progressively cut public exposure to particulate matter pollution as suggested by the World Health Organization. A new, ambitious, long-term target will be set to reduce people’s exposure to PM 2.5. ■ Future electricity, heat and industrial policies will together improve air quality and tackle climate change. Phasing out coal-fired power stations, improving energy efficiency, and shifting to cleaner power sources will reduce emissions of air pollution as well as carbon dioxide. ■ Encouraging the use of zero exhaust emissions vehicles to promote the transition towards sustainable low-carbon transport. ■ Maintaining a policy of continuous improvement in relation to industrial emissions, building on existing good practice to deliver a stable and predictable regulatory environment for business as part of a world-leading clean green economy. This includes ensuring that there is a clear 	<p>The Site Allocations DPD should ensure that allocations and policies contribute to maintaining and, where possible improving air quality by reducing greenhouse gas emissions associated with transport, energy and other industries associated with mineral extraction, as well as reducing the dispersion of particulates as a result of mineral extraction.</p>	<p>Sustainability objectives to reduce pollution and protect and improve air quality will be included in the SA Framework.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>process for determining future UK Best Available Techniques for industrial emissions.</p>		
<p>Sport England (2019) Planning for Sport Guidance</p>	<p>The guidance sets out 12 principles, which are split between overarching principles and principles that aim to protect, enhance and provide for sport and recreation. A number of principles are relevant to the DPD, including:</p> <ul style="list-style-type: none"> ■ Plan, design and maintain buildings, developments, facilities, land and environments that enable people to lead active lifestyles. ■ Protect and promote existing sport and physical activity provision and ensure new development does not prejudice its use. ■ Ensure long-term viable management and maintenance of new and existing sport and physical activity provision. ■ Support new provision, including allocating new sites, for sport and physical activity which meets identified needs. ■ Plan positively for sport and physical activity provision in designated landscapes and the green belt. 	<p>The Site Allocations DPD should recognise the opportunities afforded by minerals development to provide for sports and recreation facilities, particularly through restoration. Policies should also seek to protect and enhance existing facilities by, wherever possible, guiding development away from sites that would impact on existing sport and recreation assets.</p>	<p>SA objectives on access to green space and health will be included in the SA framework.</p>
<p>Department of Health (2010) Healthy Lives, Health People: our Strategy for</p>	<p>The white paper seeks to identify opportunities for better health and for reducing health inequalities. The paper aims to:</p> <ul style="list-style-type: none"> ■ Protect the population from serious health threats. 	<p>Ensure that site allocations and policies protect the health of the public and seek to improve this where possible. For example, the DPD should</p>	<p>Include a sustainability objective relating to health and wellbeing, including consideration of nuisance/amenity, and</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
Public Health in England	<ul style="list-style-type: none"> ■ Help people live longer, healthier and more fulfilling lives. ■ Improve the health of the poorest, fastest. ■ Prioritise public health funding from within the overall NHS budget. 	<p>protect health by locating minerals development where it is unlikely to affect health through factors such as air pollution and noise pollution, as well as protecting recreation assets, such as green space and public rights of way. The DPD should also seek to maximise potential health benefits of restoration, such as by creating new recreational assets.</p>	<p>include a sustainability objective relating to access to green space.</p>

Regional

Table A.3: Relevant Regional Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
<p>BEIS and MHCLG (2019) West Midlands Local Industrial Strategy</p>	<p>The Strategy looks to build on the West Midlands’ strengths in transport innovation, data-driven health and life sciences and globally competitive supply chain firms through the following principles:</p> <ul style="list-style-type: none"> ■ Driving growth by strengthening the foundations of productivity. ■ Ensure all communities can contribute to and benefit from economic prosperity whilst protecting and enhancing the environment. ■ Designing actions using a balanced set of inclusive indicators. <p>In terms of relevance to the DPD, the strategy also seeks to create an inclusive, clean and resilient economy, including connecting more people with economic opportunities and improving employment and progression, as well as education and skills. Minerals development also has potential to support growing infrastructure and other construction in the region.</p>	<p>The site allocations DPD can help deliver minerals to support industrial development and the delivery of appropriate sites will support economic development through provision of raw materials and opportunities for employment and skills development.</p>	<p>Ensure economic growth objective within SA framework, including improving employment and skills development opportunities for all.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
<p>Greater Birmingham & Solihull Local Enterprise Partnership (LEP) (2016) A Greater Birmingham For A Greater Britain: Strategic Economic Plan 2016-2030</p>	<p>The Strategic Economic Plan (SEP) sets out a vision, targets, and three key strategic priorities for delivering economic growth across Greater Birmingham and Solihull:</p> <ul style="list-style-type: none"> ■ Becoming a world leader in innovation and creativity. ■ Taking full advantage of our global connections. ■ Creating stronger conditions for growth across our communities. 	<p>The site allocations DPD can help deliver minerals to support industrial development and the delivery of appropriate sites will support economic growth through provision of raw materials and opportunities for employment and skills development.</p>	<p>The SA framework should include a sustainability objective relating to economic growth, including the provision of employment and skills development opportunities.</p>

County

Table A.4: Relevant County Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
<p>Worcestershire Local Enterprise Partnership (LEP) (2014) World Class Worcestershire: Our Strategic Economic Plan (SEP)</p>	<p>This SEP provides a vision and strategic framework to ensure that Worcestershire’s economy grows more rapidly and makes an increasingly important contribution to the national economy.</p> <p>The SEP sets out an ambitious vision to grow the local economy by 2025 by over 25,000 jobs and to increase GVA by £2.9 billion, and objectives that include creating a World Class business location, providing individuals with World Class Skills, and developing World Class competitive and innovative businesses.</p>	<p>The site allocations DPD can help deliver minerals to support industrial development and the delivery of appropriate sites will support economic development through provision of raw materials and opportunities for employment and skills development.</p>	<p>The SA framework should include a sustainability objective relating to economic growth, including the provision of employment and skills development opportunities for all.</p>
<p>Worcestershire County Council (2019) Emerging Worcestershire Minerals Local Plan: Publication Version</p>	<p>The emerging Worcestershire Minerals Local Plan will ensure that minerals development in Worcestershire will be part of a holistic approach to delivering sustainable economic growth, supporting health and quality of life, and enhancing the built, historic, natural and water environment, that together contribute to the diverse character of the county and surrounding area.</p> <p>The Plan will:</p>	<p>The Site Allocations DPD should take full account of the emerging Worcestershire Minerals Local Plan to ensure consistency with the MLP.</p> <p>The Site Allocations DPD can help deliver the objectives of the Worcestershire Minerals</p>	<p>The MLP was subject to SA itself, and this SA will draw on the MLP and accompanying SA, where relevant. For example, this SA Scoping Report is based on the scoping work carried out for the MLP, and the SA will</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ol style="list-style-type: none"> 1. Enable the supply of minerals. 2. Protect and enhance the environmental and socio-economic function of Worcestershire's network of green spaces and natural elements (Green Infrastructure) 3. Protect and enhance the quality, character and distinctiveness of the built, historic, natural and water environment. 4. Protect and enhance the health, well-being, safety and amenity of people and communities. 5. Protect and enhance the vitality of the local economy. 6. Ensure the prudent use of natural resources. <p>The purpose of the DPD is to assist in the delivery of the Spatial Strategy and Supply of Mineral Resources Strategic Policies set out in the MLP. The DPD is specifically referred to in Policy MLP2, which states that: "Specific sites and preferred areas will be allocated within the Avon and Carrant Brook, Lower Severn, North East Worcestershire, North West Worcestershire and Salwarpe Tributaries Strategic Corridors in a separate Mineral Site Allocations Development Plan Document and defined on the Policies Map"</p>	<p>Local Plan but will be of particular relevance in helping to achieve the economic and environmental priority outcomes.</p>	<p>consider the in-combination effects of the MLP and DPD with regards to all SA objectives.</p>
<p>The Worcestershire Partnership (2011) Worcestershire</p>	<p>The SCS identifies three key priorities for Worcestershire:</p> <ul style="list-style-type: none"> ■ A skilled and prosperous economy; ■ An environment that is cherished and resilient; and, 	<p>The Site Allocations DPD can help deliver all three of the county-wide priorities, but will be of particular relevance in helping to achieve the</p>	<p>SA should include objectives relating to health, the economy and the environment.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
Single Sustainable Community Strategy	<ul style="list-style-type: none"> ■ Improving health & well-being. <p>Economic priority outcomes for the next ten years are:</p> <ul style="list-style-type: none"> ■ Enhanced economic prosperity through sustainable economic growth; ■ Improved survival rates for new and existing business; and, ■ A skilled workforce that meets the needs of business. <p>Environmental priority outcomes for the next 10 years are:</p> <ul style="list-style-type: none"> ■ Protecting and enhancing the county's natural and historic environment through a better understanding of its social and economic value and its contribution to health and well-being; ■ Working better together to deliver environmental improvements; and, ■ Mitigating and adapting to climate change. <p>Health and well-being priority outcomes for the next 10 years are:</p> <ul style="list-style-type: none"> ■ To reduce health inequalities between social groups in terms of health and quality of life outcomes; ■ To improve the quality of life and independence of older people and those with a long-term illness; and, 	<p>economic and environmental priority outcomes. The Site Allocations DPD should foster a collaborative, partnership approach and should involve consultation with sector experts when developing policies for restoration.</p>	

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ To improve mental health and well-being. 		
<p>Worcestershire County Council (2020) Worcestershire Local Transport Plan 4 2018-2030</p>	<p>The LTP4 was adopted in 2017 and sets out the issues and priorities for investment in transport infrastructure, technology and services to support travel by all relevant modes of transport, including walking, cycling, rail, highways (car, van, freight and motorcycles), bus and community transport. The Plan is underpinned by a series of objectives:</p> <ul style="list-style-type: none"> ■ The Economic Objective: To support Worcestershire's economic competitiveness and growth through delivering a safe, reliable and efficient transport network. ■ The Environment Objective: To limit the impacts of transport in Worcestershire on the local environment, by supporting enhancements to the natural environment and biodiversity, investing in transport infrastructure to reduce flood risk and other environmental damage, and reducing transport-related emissions of nitrogen dioxide, particulate matter, greenhouse gases and noise pollution. This will support delivery of the desired outcomes of tackling climate change and reducing the impacts of transport on public health. ■ The Health and Safety Objective: To contribute towards better safety, security, health and longer life expectancy in Worcestershire, by reducing the risk of death, injury or illness arising from transport and promoting healthy modes of travel. 	<p>The Site Allocations DPD should include policies and allocations that minimise transport-related emissions of nitrogen dioxide, particulate matter, greenhouse gases and noise pollution, take advantage of sustainable transport modes wherever possible and site development near to relevant markets.</p> <p>The DPD should also include policies to ensure that minerals development operations do not over burden existing transport networks.</p>	<p>The SA Framework should include sustainability objectives that relate to sustainable transport and the minimisation of greenhouse gas emissions to contribute towards climate change mitigation.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ The Equality Objective: To optimise equality of opportunity for all of Worcestershire’s citizens with the desired outcome of creating a fairer society. ■ The Quality of Life Objective: To enhance the quality of life for Worcestershire’s residents by promoting a healthy, natural environment, for people, wildlife and habitats, conserving our historic built environment and preserving our heritage assets. 		
<p>Worcestershire County Council (2012) Worcestershire Climate Change Strategy 2012-2020</p>	<p>Note that, whilst this strategy covered the period 2012-2020, an updated version has not been published. However, Worcestershire County Council is working in partnership as part of the Local Enterprise Partnership to deliver the County's Energy Strategy (see below), which also sets carbon targets.</p> <p>The strategy sets the target to reduce climate change causing gas emissions across the county by a minimum of 30% from 2005 levels by 2020 (this had been exceeded by 2018, when the county's carbon emissions per person had decreased by 36.6% since the 2005 baseline year [See reference 122]) and put in place measures to enable reduction by 80% by 2050 by:</p> <ul style="list-style-type: none"> ■ Facilitating community level action to reduce carbon emissions; 	<p>The Site Allocations DPD should be informed by the latest climate change predictions and should seek to guide development type and location so as to minimise additional CO2 emissions and to adapt to the consequences of climate change. Minerals development should take advantage of sustainable transport modes wherever possible, and site development near to relevant markets. Restoration of minerals sites could help to draw down atmospheric carbon, for example through woodland planting, and build resilience</p>	<p>Ensure climate change objective forms part of SA framework.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Delivering effective education and awareness raising programmes related to climate change; ■ Improving the energy efficiency of Worcestershire’s homes and stopping the growth of fuel poverty; ■ Utilising spatial planning processes to enable transition to a low carbon economy; ■ Helping to realise the county’s potential to harness the power of renewable energy, recognising the importance of public perception; ■ Developing smarter travel choices programmes, (including smarter use of ICT to help residents avoid travel), and facilitate use of alternatively fuelled vehicles; ■ Building a low carbon economy by working with private sector organisations through the Worcestershire LEP, focusing on resource efficiency, skills development, business opportunities, green jobs and best practice sharing; ■ Working together to implement Worcestershire organisations’ existing carbon management plans and encourage other organisations to take action too; ■ Enable the management of land to reduce carbon emissions, maximise natural carbon sinks and promote local food production; and 	<p>and adaptation to climate change through provision of green infrastructure. The role of restored minerals sites to act as a refuge for wildlife displaced by climate change should also be explored.</p>	

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Ensuring all key strategies and plans address carbon reduction. 		
<p>Worcestershire County Council (2018) Worcestershire Energy Strategy 2019-2030</p>	<p>The document sets out the vision for the future of energy in Worcestershire, which will include the delivery of:</p> <ul style="list-style-type: none"> ■ Reduction in carbon emissions of 50% on 2005 levels by 2030; ■ Double the size of the low carbon sector by 2030; and ■ Tripling energy production from renewable generation by 2030. <p>The following sub-targets have been set to monitor the ongoing progress of the strategy:</p> <ul style="list-style-type: none"> ■ Annual 5% growth of the low carbon sector, doubling the sector size between 2016 and 2030; ■ Increasing renewable electricity generation from 5% of local demand to 15% by 2030; ■ Undertaking 2,000 annual energy efficiency interventions; ■ Integration of energy management into Worcestershire 5G Testbed; and ■ 50% reduction on 2005 carbon emissions by 2030. 	<p>The Site Allocations DPD can encourage minimisation or reduction of carbon emissions. Policies should seek to ensure that operations minimise carbon emissions from transport, through siting near to relevant markets and taking advantage of sustainable transport modes. The use of renewable or low carbon energy should be encouraged where possible.</p>	<p>Ensure the SA framework contains an objective on climate change to reduce carbon emissions arising from energy usage.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
<p>Worcestershire County Council (2012) Worcestershire Landscape Character Assessment Supplementary Guidance</p>	<p>The LCA SG seeks to explain the modern concepts of landscape and landscape character and to offer guidance in the application of Landscape Character Assessment (LCA). It provides background information, sets landscape character within the planning framework and describes the processes of assessment and evaluation. It describes the Landscape Types which underlie landscape-based planning, along with a brief analysis of changing character trends and guidance for future management and development.</p> <p>Strategic objectives:</p> <ul style="list-style-type: none"> ■ Conserve and enhance the distinctive landscape elements and features identified in Landscape Character Assessments and Historic Landscape Characterisations, particularly those that are most sensitive or have little capacity for change; ■ Restore distinctive landscapes and landscape features that have been significantly degraded; ■ Identify and promote opportunities for positive landscape change to landowners, managers, government and all those with an influence over land; ■ Undertake survey and research to better understand and monitor the condition, and rate of change, of landscape character within the framework of the Landscape 	<p>The Site Allocations DPD should include policies to ensure that the landscape impact of proposals is taken into account. This includes considering the landscape character types and the guidance to direct development to less sensitive areas, and ensuring restoration proposals take into account the surrounding landscape.</p>	<p>Ensure landscape objective within SA framework.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>Character Assessments and Historic Landscape Characterisation;</p> <ul style="list-style-type: none"> ■ Seek resources to promote landscape management and improvements; and ■ Promote greater awareness and appreciation of the landscape attributes and character of the AONB among residents and visitors, providing opportunities for them to be involved in identifying and conserving locally distinctive features, views and landscapes. 		
<p>Worcestershire County Council (2013) Worcestershire Green Infrastructure Strategy 2013-2018</p>	<p>The Strategy is a non-statutory county-wide guidance document which aims to direct and drive the delivery of GI in Worcestershire and inform relevant strategies and plans of partner organisations. The time period of the strategy has now expired, although much of the guidance remains of value. Whilst no replacement strategy has been prepared, four 'Green Infrastructure Framework' documents were prepared as part of the evidence base for the Worcestershire GI strategy and informed the production of the MLP.</p> <p>The strategic objectives of the Green Infrastructure Strategy are to:</p> <ul style="list-style-type: none"> ■ Establish a framework of principles and priorities for green infrastructure in Worcestershire to meet the multiple integrated needs of business, the natural & historic environment and our communities; 	<p>The Site Allocations DPD has a key role to play in delivering green infrastructure. Due to the scale of opportunities presented by development and restoration, the Site Allocations DPD can guide minerals development to secure meaningful and large-scale green infrastructure gains for Worcestershire. Green infrastructure partners should be engaged throughout development of the Site Allocations DPD.</p>	<p>Ensure all elements of green infrastructure appear within the SA framework (integrating into a single objective would make appraisal more difficult).</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Embed the benefits of green infrastructure and the services the environment provides in supporting the successful growth of Worcestershire’s economy and the health and well-being of its communities; ■ Synthesise existing evidence to identify needs and opportunities to inform the future planning and management of green infrastructure in Worcestershire which complements wider networks beyond Worcestershire; ■ Drive the implementation, delivery and long-term maintenance of high-quality green infrastructure in the county and ensure that measures are in place by 2018 to deliver the vision; and ■ Assist partners in aligning future delivery projects and their funding streams. <p>The main opportunities to plan, deliver and manage green infrastructure in the county will be from integrating green infrastructure priorities and principles into other proposals and decision-making processes. These include (inter alia) minerals extraction and restoration.</p> <p>The delivery of GI is likely to be an increasingly important consideration when assessing the extent to which proposals for housing, employment, mineral working, and infrastructure projects constitute sustainable development.</p>		

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
<p>Worcestershire County Council (2018) Worcestershire Biodiversity Action Plan</p>	<p>The 2018-2027 Worcestershire Biodiversity Action Plan (BAP) identifies 17 habitats and 26 species, or species groups, which are of particular conservation priority in the county. Each of these habitats and species/species groups has its own Action Plan, which provides an overview of the current status of the habitat or species in Worcestershire and identifies threats to it. The plans present aims and objectives for the conservation of that habitat or species over the ten-year lifespan of the BAP. All habitat and species that have action plans have potential to be relevant to minerals development, as this depends on the existing habitat(s) where development is located. Examples likely to be particularly relevant include:</p> <ul style="list-style-type: none"> ■ H1 Arable Farmland Habitat Action Plan: There has been a severe decline in the number and distribution of many native wildlife species associated with arable land since 1945, particularly in the latter half of this period, including farmland birds, which have their own action plan. Conservation objectives include appropriate management of field margins and measures to support Integrated Pest Management Systems. ■ H3 Hedgerows Habitat Action Plan: Hedgerows combine the wildlife benefits of scrub, woodland and woodland edge habitats and support many common species as well as some rare ones. Over-management or inappropriate management of hedgerows is still a significant issue with the removal of hedgerows through development often due 	<p>The Site Allocations DPD should ensure wildlife protection and seek to contribute to the objectives and actions set out in the Action Plans through policies to protect and enhance biodiversity, through careful siting of minerals development and through restoration requirements.</p>	<p>The SA Framework should include sustainability objectives relating to conservation and enhancement of biodiversity and the natural environment.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>to inadequate legislative power to prevent this happening. Conservation Objectives include promoting the planting and marking of new hedgerow trees and the selection and marking of existing stems or saplings to be managed as hedgerow trees.</p> <ul style="list-style-type: none"> ■ H5 Woodland Habitat Action Plan: The Plan outlines current factors affecting woodland habitat, which includes fragmentation of woodland due to development or clearance for other land uses, and air pollution and other environmental influences originating from distant sources. Conservation Objectives include the restoration of Plantations on Ancient Woodland Sites (PAWS) to a more semi-natural vegetative cover and to take opportunities to re-link fragmented PAWS and ancient woodland sites. 		
<p>Worcestershire County Council (2012) Worcestershire Historic Landscape Characterisation</p>	<p>HLC seeks to identify the valued characteristics of the county's landscapes, whether it is field patterns, settlements or other elements, so that they can be effectively managed into the future, providing benefits for residents and visitors alike.</p> <p>The historic landscape is sensitive to change and needs to be properly understood before change is planned, to ensure its effective management and enhancement, so that it can make its full contribution in shaping sustainable communities.</p> <p>The broad objectives of the Worcestershire HLC project are:</p>	<p>Site Allocations DPD should include policies to ensure that the historic landscape character of proposals is taken into account. This links strongly with the Landscape Character Assessment above.</p>	<p>Ensure landscape and historic environment objectives within SA framework.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ To improve understanding of the landscape in Worcestershire; ■ To provide a context for archaeological sites and monuments within the county; ■ To provide a framework for informed landscape management strategies; ■ To better inform spatial planning, development control, conservation issues and academic research; ■ To underpin historic environment advice given to district councils and other environment/ conservation agencies, such as Natural England and the Forestry Commission; ■ To monitor future changes within the historic environment; ■ To support and inform outreach and educational programmes in order to engage and inform the wider community about their local historic landscape; ■ To create a dynamic and versatile dataset that can be enhanced and updated to reflect changes in the historic environment; and ■ To produce a dataset that is compatible with those of adjacent counties in order to inform regional and higher-level historic landscape characterisation. 		

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
<p>Worcestershire County Council (2007) Archaeology and aggregates in Worcestershire: A resource assessment and research agenda</p>	<p>This project was undertaken to assess the archaeological resource of the aggregate producing areas of Worcestershire. It is intended to promote understanding of the archaeological resource and support the development and implementation of future mitigation strategies relating to aggregate extraction within the county.</p> <p>The assessment's objectives are:</p> <ul style="list-style-type: none"> ■ To produce detailed mapping and a written description of the aggregates resource in Worcestershire; ■ To identify the areas likely to be affected by future aggregate minerals extraction; ■ To incorporate the existing transcribed aerial photographic data (produced by RCHME) for the aggregate-producing areas into the Worcestershire HER; ■ To produce a resource assessment of the existing archaeological resource in the aggregate producing areas of Worcestershire; ■ To produce an initial archaeological research agenda for the aggregate areas, and identify areas where future data capture could answer the questions posed; ■ To assess current methodologies for archaeological evaluation, excavation, and mitigation; and 	<p>The Site Allocations DPD should be informed by this project in its consideration of how minerals policies and sites could impact upon the historic environment.</p>	<p>Ensure historic environment objective within SA framework, including consideration of archaeology.</p>

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ To make available the information gathered to the archaeological community, the aggregates industry and the wider public. 		
<p>Worcestershire County Council (2012) Waste Core Strategy for Worcestershire: Adopted Waste Local Plan 2021-2027</p>	<p>The Waste Core Strategy sets out a long term vision for waste management in Worcestershire to 2027. This vision integrates economic, social and environmental aims and responds to local issues. Detailed objectives have been developed to help guide the realisation of the vision. These objectives direct the policies and form the basis of the monitoring framework. Relevant objectives include:</p> <ul style="list-style-type: none"> ■ To base decisions on the need to reduce greenhouse gas emissions and to be resilient to climate change. ■ To base decisions on the principles of sustainable development by protecting and enhancing the County's natural resources, environmental, cultural and economic assets, the character and amenity of the local area and the health and wellbeing of the local people. ■ To make driving waste up the waste hierarchy the basis for waste management in Worcestershire. ■ To ensure that the waste implications of all new development in Worcestershire are taken into account. ■ To involve all those affected as openly and effectively as possible. 	<p>The Site Allocations DPD should locate minerals development where it will not disrupt the operation of waste management facilities.</p>	<p>The SA Framework should include a sustainability objective relating to sustainable waste management and consideration of development location on waste facilities.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ To direct development to the most appropriate locations in accordance with the Spatial Strategy. 		

Other

Table A.5: Relevant Other Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
DEFRA and Environment Agency (2016) Water for life and livelihoods, Part 1: Severn river basin district River basin management plan	<p>This plan focuses on the protection, improvement and sustainable use of the water environment.</p> <p>Environmental Objectives:</p> <ul style="list-style-type: none"> ■ To prevent deterioration of the status of surface waters and groundwater; ■ To achieve objectives and standards for protected areas; ■ To aim to achieve good status for all water bodies or, for heavily modified water bodies and artificial water bodies, 	Site Allocations DPD should recognise the impact that mineral operations can have on the water environment and should seek to ensure that protective policies are in place.	Water objective to be included within SA framework.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>good ecological potential and good surface water chemical status;</p> <ul style="list-style-type: none"> ■ To reverse any significant and sustained upward trends in pollutant concentrations in groundwater; ■ The cessation of discharges, emissions and losses of priority hazardous substances into surface waters; and ■ Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants. <p>Environmental objectives have been set for each of the protected areas and water bodies in the river basin district. They were identified through a process involving technical and economic appraisals and formal public consultation. Achieving the objectives will optimise the benefits to society from using the water environment. The environmental objectives summarised in this section are legally binding. All public bodies must have regard to these objectives when making decisions that could affect the quality of the water environment.</p> <p>Water body Objectives:</p> <ul style="list-style-type: none"> ■ For surface waters, objectives are set for ecological and chemical status; ■ For artificial or heavily modified water bodies, objectives are set for ecological potential and chemical status; and 		

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ For groundwater, objectives are set for quantitative and chemical status. <p>The mining and quarrying sector has active operations in this river basin district. Past activity has left a legacy from historic mining and now, working with partners, the Environment Agency has an established Strategy for investigation and remediation of these sites</p>		
<p>Environment Agency (2009) River Severn Catchment Flood Management Plan</p>	<p>Provides an overview of the flood risk in the River Severn catchment and sets out the Environment Agency's preferred plan for sustainable flood risk management over the next 50 to 100 years. The Plan splits the catchment into sub-corridors. The actions for those that lie within Worcestershire are set out below.</p> <p>Proposed actions in the Middle Severn Corridor (this corridor follows the River Severn from Shrewsbury to Worcester):</p> <ul style="list-style-type: none"> ■ Ensure floodplains are not inappropriately developed. Follow the 'sequential approach' (set out in the PPG) and consider land swapping opportunities; ■ Encourage compatibility between urban open spaces, and their ability to make space for rivers to expand as flood flows occur. One example of a flood-compatible use is playing fields. Develop strategies to create 'blue corridors' by developing/redeveloping to link these flood-compatible spaces; 	<p>The Site Allocations DPD should ensure that policies and site locations take flood risk and flood risk management into account.</p>	<p>Flooding objective to be included within SA framework.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Encourage rural and urban best practices in land-use and in land-management to restore more sustainable natural floodplains and to reduce run-off; ■ Review how effective and sustainable each flood defence is. Review maintenance operations to ensure they are proportionate to flood risk. Focus efforts on protecting communities and making them more resilient to flooding. It should be noted that protecting large areas of agricultural land in the floodplain tends to increase flood risk for downstream communities; ■ Develop a better understanding of flooding from surface water, from drainage systems, and from ‘non-main’ watercourses. Produce a strategy for operation and investment, integrating all these with main rivers; ■ Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses; ■ Maintain flood warning systems and seek opportunities to improve effectiveness and coverage; and ■ Seek ecological improvements. <p>Proposed actions in the Telford, Black Country, Bromsgrove, Kidderminster and Coventry Cluster (this corridor runs to the</p>		

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>east of the Middle Severn Corridor, from Telford to Droitwich Spa):</p> <ul style="list-style-type: none"> ■ Ensure floodplains are not inappropriately developed. Follow the ‘sequential approach’ (now set out in the PPG)and consider land swapping opportunities; ■ Encourage compatibility between urban open spaces and their ability to make space for rivers to expand as flood flows occur. One example of a flood-compatible use is playing fields. Develop strategies to create ‘blue corridors’ by developing/redeveloping to link these flood-compatible spaces; ■ Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses; ■ Develop better understanding of flooding from surface water, from drainage systems, and from ‘non-main’ watercourses. Produce a strategy for operation and investment, integrating all these with main rivers, particularly for Coventry and Leamington Spa. Local authorities to develop Surface Water Management Plans for the Bromsgrove, Droitwich and Kidderminster areas. Apply lessons from Integrated Urban Drainage pilot schemes, for example Telford & Wrekin; 		

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Review how effective and sustainable each flood defence is. Review maintenance operations to ensure they are proportionate to flood risk. Manage fly-tipping [on floodplains and in channels.] Avoid excessive silt accumulation in artificial channels [Either by channel modifications or by de-silting.] Focus on bottlenecks. Watercourses in Coventry are covered by the Green Infrastructure & Green Space Strategy; ■ Maintain flood warning systems and explore opportunities to improve their effectiveness and coverage, with Coventry as a high priority for in-depth study; and ■ Carry out an assessment of the scheme to canalise the River Salwarpe [around Droitwich etc.] in terms of flood risk. <p>Proposed actions in the Lower Severn Corridor & Leadon Catchment (this corridor covers the area south of Worcester to Gloucester, including the River Leadon):</p> <ul style="list-style-type: none"> ■ Encourage rural and urban best practices in land-use and in land-management to restore more sustainable natural floodplains and to reduce run-off; ■ Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses; 		

Appendix A Review of Relevant Plans and Programmes

Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Ensure floodplains are not inappropriately developed. Follow the ‘sequential approach’ (set out in the PPG), and consider land swapping opportunities; ■ Review how effective and sustainable flood defences are. Ensure that maintenance operations are proportionate to flood risk. In the Severn Corridor there are raised defences in the Chelt Basin that mainly protect agricultural land. These need to be reviewed to find out how effective they are and what impact they have downstream; and ■ Seek opportunities to improve watercourses where it would benefit fisheries (especially salmon.) Consider the impact of flood risk management activities on SSSIs, for example Malthouse Farm Meadows. <p>Proposed actions in the Middle Avon, Tributaries, Arrow and Alne, Redditch, Rugby and Teme (this corridor covers the area to the west of the Middle Severn Corridor, along and north of the River Teme, and also covers the area east of Worcester, around the River Avon):</p> <ul style="list-style-type: none"> ■ Encourage rural and urban best practices in land-use and in land-management to restore more sustainable natural floodplains and to reduce run-off; ■ Ensure that the run-off from all proposed development is minimised. For example, SuDS must be encouraged and targeted within planning approvals. Encourage the retro- 		

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>fitting of SuDS where surface water flooding is already a problem;</p> <ul style="list-style-type: none"> ■ Raise awareness of flooding among the public and key partners, especially major operators of infrastructure, allowing them to be better prepared. Encourage them all to increase the resilience and resistance of vulnerable buildings, infrastructure and businesses; ■ Maintain flood warning systems and explore opportunities to improve their effectiveness and coverage; ■ Ensure floodplains are not inappropriately developed. Follow the ‘sequential approach’ (set out in the PPG), and consider land swapping opportunities; ■ Encourage compatibility between urban open spaces and their ability to make space for rivers to expand as flood flows occur. One example of a flood compatible use is playing fields. Appraise strategies to create ‘blue corridors’ by developing/redeveloping to link these flood-compatible spaces; ■ Develop better understanding of flooding from surface water, from drainage systems, and from ‘non-main’ watercourses. Produce a strategy for operation and investment, integrating these with main rivers. Local authorities to develop Surface Water Management Plans for in and around Rugby; 		

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<ul style="list-style-type: none"> ■ Support ecological improvements. Examples of this include Severn & Avon Wetlands Project; Natural England’s three fluvial SSSIs; Cotswold AONB; and ■ Maintain flood warning systems and look for opportunities to improve their effectiveness and coverage. 		
<p>Cotswolds Conservation Board (2018) Cotswolds AONB Management Plan (2018-2023)</p>	<p>The primary purpose of AONB designation is to conserve and enhance the natural beauty of the area. The landscape of the AONB must be managed in ways that conserve and enhance landscape character, local distinctiveness, geology and geomorphology, historic features, habitats and biological diversity. A sustainable approach must be taken to all issues within the AONB, particularly in the development and management of its rural economy.</p> <p>By 2043, the Cotswolds AONB will be:</p> <ul style="list-style-type: none"> ■ A distinctive, unique, accessible living landscape treasured for its diversity which is recognised by all for its wide open views, dry stone walls, intimate valleys, flower rich grasslands, ancient woodlands, dark skies, tranquillity, archaeology, historic and cultural heritage and distinctive Cotswold stone architecture; and ■ A thriving collaborative, pioneering, proactive place, sustained by the passions of residents, visitors and businesses alike, where communities and businesses value its special qualities. 	<p>Site Allocations DPD should recognise the impact minerals development can have on the Cotswolds AONB and locate minerals development away from the most sensitive areas.</p> <p>Site Allocations DPD could make provision for a continuous supply of walling and building stone to maintain local distinctiveness, by encouraging small scale local quarries.</p>	<p>Include SA objective relating to landscape and consider potential effects of the DPD on the AONB.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>Limestone gives the area unity. This can be seen in the underlying geology and in the stone used for buildings and dry stone walls throughout the Cotswolds.</p> <p>The implications of climate change for all activities must be addressed seeking to mitigate the causes of climate change by minimising the output of greenhouse gases; and at the same time taking action to adapt to the effects of climate change in ways that conserve and enhance the Cotswolds' special qualities.</p> <p>It is important to increase people's awareness, knowledge and understanding of the qualities of the AONB, and of the opportunities to enjoy and explore the area.</p> <p>Provision should be made for the quarrying of limestone, at an appropriate scale, in order provide building materials that help maintain and enhance local distinctiveness. Any such mineral sites should be required to demonstrate that they do not have any significant adverse effects on the special qualities of the AONB or integrity of existing wildlife sites. Developments should use an appropriate colour of limestone to reflect local distinctiveness.</p>		
Cotswolds Conservation Board (2013) Position Statement: Minerals and	<p>Although the Position Statement refers to the previous edition of the AONB Management Plan, the principles remain valid to the Site Allocations DPD.</p> <p>The aim of the Plan with respect to minerals is to support the use of sustainable resources, involving a reducing demand</p>	Site Allocations DPD should recognise the impact minerals development can have on the Cotswolds AONB and locate minerals development away from the most sensitive areas.	Include SA objective relating to landscape and consider potential effects of the DPD on the AONB.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
Waste Planning (as amended)	<p>within the Cotswolds AONB unless there is an overriding national need.</p> <p>The Board would therefore expect a Minerals and Waste Planning Authority to demonstrate that it has made very clear in negotiations regarding regional apportionment of minerals requirements that additional quarrying for crushed limestone has a considerable adverse impact on the designated landscape.</p> <p>The Board will be expecting a Minerals and Waste Planning Authority to demonstrate very clearly that any extensions to existing or new quarries for crushed limestone in the AONB are only to be permitted if in the national interest. The Board will wish to see the use of secondary aggregates promoted in Minerals Core Strategies/Local Plans.</p> <p>However, a continuous supply of walling and building stone, including stone roofing slates, is required to conserve and enhance the distinctive built environment of the Cotswolds.</p> <p>The character of stone varies considerably across the AONB, and local sources are required to maintain local distinctiveness. In 2003 the former Cotswolds AONB Partnership published a study “Local Distinctiveness and Landscape Change”. This identified the reducing local supply of stone (other than crushed rock) as a threat to this locally distinct built environment. Supply of building stone is becoming more restricted to bigger quarries supplying larger areas. This is leading to a more uniform appearance of stone buildings than existed previously. The study suggests that a</p>	<p>Site Allocations DPD could make provision for a continuous supply of walling and building stone to maintain local distinctiveness, by encouraging small scale local quarries.</p>	

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>possible solution would be the formulation of mineral planning policies which encouraged small scale local quarries and discouraged the further expansion of the larger operations. A resurgence of the formerly widespread “delving” tradition, particularly for low grade walling stone, as part of land management is envisaged. An investigation of the potential for small scale mining for stone where this would be less harmful to the landscape is also suggested.</p> <p>The Board would therefore wish to see this matter explored in the Minerals Core Strategy/Local Plan process.</p> <p>The Objective of the Plan with respect to waste management is to encourage the most sustainable, effective, and efficient use of all natural resources, including supporting waste reduction and recycling.</p> <p>Therefore, with regard to waste, the Board would not wish to see any expansion of existing or location of new facilities other than as set out in (b) above within the AONB. In addition to the adverse effect on the landscape, such facilities will also result in additional vehicle movements on rural roads resulting in an adverse effect on tranquillity. The Board would welcome in principle the opportunity to encourage waste reduction and recycling.</p>		
UK Government (1995) Malvern Hills Act 1995	Five Acts of Parliament (in 1884, 1909, 1924, 1930, and 1995) gave various powers to the Malvern Hills Conservators to protect, control and manage certain land around the	The Site Allocations DPD should direct minerals development to areas not	Include SA objective relating to landscape.

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>Malvern Hills. The 1884 and 1924 Acts included specific provisions for controlling minerals extraction.</p> <p>The 1884 Act required that placement of new quarries caused as little alteration to the hills as reasonably practicable.</p> <p>The 1924 Act allowed local authorities to obtain licences to obtain stone for the repair of roads situated within a radius of seven miles from Priory Church at Malvern Hills, as long as this would not interfere with the natural aspect of the Malvern Hills.</p>	<p>subject to the Malvern Hills Acts.</p> <p>Consideration should also be given to the creation of permanent geodiversity exposures which may impact the valued landscape.</p>	
<p>Malvern Hills AONB (2019) Malvern Hills AONB Management Plan 2019-2024</p>	<p>The Management Plan sets out a vision for 2040. Minerals development within or close to the AONB has potential to counteract or support progress towards this vision.</p> <p>In terms of landscape, the vision seeks to maintain and enhance key landscape features, including the pattern of woodland, settlements and field boundaries. It notes that “Change in the landscape is accepted and its impacts accommodated through positive management”.</p> <p>The Management Plan seeks to maintain and enhance the natural environment, including management of ancient rock formations, supporting biodiversity and a range of habitats, both terrestrial and aquatic. The plan also promotes linking habitats to provide extensive ecological networks, both within and beyond the AONB.</p> <p>In terms of the historic environment, the plan seeks to maintain historic field patterns, villages, and features such as</p>	<p>The Site Allocations DPD should direct minerals development to areas less likely to have an impact on the AONB.</p> <p>Consideration should also be given to the creation of permanent geodiversity exposures.</p>	<p>Include SA objective relating to landscape, including consideration of effects on the AONB.</p>

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Plan/ Programme Name	Key objectives/targets/ guidance relevant to the plan and the SA	Implications for emerging DPD	Implications for the Sustainability Appraisal
	<p>monuments, parklands and buildings. The vision seeks to ensure distinctive heritage assets are conserved and able to be understood and enjoyed by all.</p> <p>Currently, mineral extraction in the AONB is largely prohibited by mineral plan policies, other than in exceptional circumstances. A lack of local building materials can make it difficult to restore characteristic features, such as walls and buildings and to impart character to new development. Materials brought in can be costly to transport and can increase the carbon cost of development. Systems to recycle and re-use local materials need to be initiated or expanded. The use of loose material in former quarries and the limited winning of new materials should be considered where this helps to meet conservation objectives, does not impact on special features and is subject to all relevant consenting procedures. This does not apply to ‘naturally occurring’ loose materials, for example those derived from erosion that is not the result of human activity, which should not be used. Control is through the Minerals Local Plans being developed by the County Councils.</p>		

Appendix B

How Specific Sites and Preferred Areas Options will be Appraised

This Appendix sets out criteria to help identify whether specific sites and preferred areas will have likely significant effects on each SA objective. This appendix is intended to inform the appraisal of reasonable alternatives considered by WCC for inclusion as specific sites and preferred areas within the DPD. As such, the guidance below is based primarily on geographic thresholds and criteria, which can be applied when considering potential specific site options and preferred area options on the basis of their red line boundary only (a 'policy-off' assessment). In order to be precautionary, policy-off assessments will assume minerals development could take place across the whole area within the boundary, and will not assume any mitigation is put in place. This ensures that all specific site and preferred area options can be assessed on a consistent basis and that each specific site/preferred area is considered on its own merits. Once the Council has selected preferred options and has drafted site allocation policies to go with them, the information set out in this Appendix will serve as the starting point for assessment, but the contents of the site-specific DPD policy will also be taken into account (e.g. specific mitigation requirements that are likely to be set out).

The assessments will be carried out on a precautionary basis. It is noted that, for many SA objectives, it is not possible to identify positive effects when considering specific sites and preferred areas on a 'policy-off' basis, as many positive effects depend on specific design measures and restoration techniques, which will not be known until policies are developed and/or planning applications are submitted. Nevertheless, the tables below include criteria that illustrate how positive effects could be achieved, and these will be taken into account mostly when appraising the preferred options and related site allocation policies.

SA Objective 1: Landscape

The SA will draw on the landscape comments prepared by the Council for each site option to identify which landscape type(s) [See reference 123] and land cover parcel (LCP)(s) [See reference 124] each spatial (site or preferred area) option falls within. In particular, the SA will draw on the sensitivity and resilience of the LCP to determine whether development will result in any likely significant effects (see **Error! Reference source not found.**).

The SA will identify, through GIS searches, any landscape designations that could be affected by the development of the spatial option. Landscape designations in this context are Areas of Outstanding Natural Beauty (AONBs). A distance threshold of 4.5km from the Bredon Hill viewpoint and 5km from the ridgetop of the Malvern Hills AONB are used as a guide, drawing on the respective AONB studies, which, although focused on other types of development, still provide a useful indication of general visibility from the AONBs. The 4.5km distance from the Bredon Hill Viewpoint is based on the Cotswolds AONB Study (May 2019) [See reference 125], which considers primarily housing and employment/commercial uses, and leisure/tourism/sports uses around Broadway, although it notes that ‘Larger development types (in terms of size of structure and extent of development) may need to be considered in relation to their effects on setting beyond 4.5km’. The 5km distance from the ridgetop of the Malvern Hills is taken from the Malvern Hills AONB Study (May 2019) [See reference 126], which considers housing, employment/commercial uses, leisure/tourism/sports uses and recreational development, although it notes that very large scale commercial, employment, solar farm or wind energy developments may have a substantive effect beyond 5 km. It is noted however, that there is no absolute threshold over which an impact may or may not be significant, as this will depend on a range of factors, such as topography, screening, intervisibility between the minerals spatial option and the landscape designation.

The landscape and visual impact of likely mineral extraction proposals on receptors will also be considered. The WCC landscape comments prepared for each site identify receptors with potential visual sensitivity to development. The

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SA will consider the likelihood of minerals development affecting these 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.

Table B.1: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 1: Landscape (Safeguard and strengthen landscape character and quality and minimise negative visual impact)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating*
Be within or adjacent to an AONB	--
Have negative visual impacts on one or more receptors identified as having high to medium visual sensitivity set out in the WCC landscape comments	--
Be in an LCP of high sensitivity or low resilience to change	--
Be within 4.5km of Bredon Hill viewpoint or 5km from the ridgetop of the Malvern Hills AONB	-
Have negative visual impacts on one or more receptors identified as having some potential visual sensitivity set out in the WCC landscape comments	-
Be in an LCP of medium sensitivity or moderate resilience to change	-
Have negligible or no impact on landscape and/or visual impact	0
Protect visual amenity of sensitive receptors set out in the WCC landscape comments (note that this will depend on specific mitigation and restoration techniques)	+
Protect landscape character (note that this will depend on specific mitigation and restoration techniques).	+
Have positive visual impacts on receptors set out in the WCC landscape comments (note that this will depend on specific mitigation and restoration techniques)	++

Appendix B How Specific Sites and Preferred Areas Options will be Appraised

Minerals development within the specific site or preferred area will, or is likely to...	SA rating*
Enhance landscape character or restore degraded landscapes (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown landscape and visual impact	?

*Where the landscape comments prepared by the Council suggest the effect can be mitigated, uncertainty (?) will be added to the score.

SA Objective 2: Biodiversity and geodiversity

A GIS search will be used to identify relevant designations within or in close proximity to spatial options (i.e. Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites, Sites of Special Scientific Interest (SSSIs), Local Wildlife Sites (LWSs), Local Geological Sites (LGSs), and areas of Ancient Semi-Natural Woodland). There is no absolute distance threshold between a spatial option and a designation that signifies a particular scale and likelihood of impact, as this will depend on the particular characteristics of the designated site and the pathways between the impacts and receptors, which may be hydrological, airborne, etc. All nationally and locally designated sites within 1.5km of spatial options will be identified. This 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. Loss of all or part of any designated site (national or local) is considered a significant negative effect, given that this direct loss cannot be mitigated.

With regards to internationally designated sites, the SA will be informed by the findings of the Habitats Regulations Assessment (HRA) when available. The HRA considers only European nature conservation sites and land or water courses functionally linked to the integrity of these sites (SACs, SPAs and

Appendix B How Specific Sites and Preferred Areas Options will be Appraised

Ramsar sites (even though Ramsar sites are designated at the international level)).

As well as designated sites, the SA will also draw on the desk-based ecological appraisal undertaken by the Council for each site, as well as taking into account priority habitats within or adjacent to sites that could be lost to or degraded by development. Minerals workings within Biodiversity Delivery Areas could help achieve the aims of these areas through site restoration.

Table B.2: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 2: Biodiversity and geodiversity (Conserve and enhance Worcestershire’s biodiversity and geodiversity)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Have potential for likely adverse effects on the integrity of a European site, as identified in the HRA	--
Contain a national biodiversity or geodiversity site	--
Be within 1.5km of a national biodiversity or geodiversity site	--
Contain a locally designated biodiversity or geodiversity site	--
Be within 1.5km of a locally designated biodiversity or geodiversity site	-
Contain or be adjacent to a priority habitat	-
Have no impact on biodiversity or geodiversity due to distance from designated sites	0
Protect/conservate a designated biodiversity or geodiversity site (note that this will depend on specific mitigation and restoration techniques)	+
Contribute towards relevant Biodiversity Delivery Area targets (note that this will depend on specific mitigation and restoration techniques)	+

Appendix B How Specific Sites and Preferred Areas Options will be Appraised

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Enhance biodiversity and geodiversity, including achieving more than 10% net gain in biodiversity (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown impact on biodiversity and geodiversity	?

SA Objective 3: Cultural heritage, architecture and archaeology

GIS will be used to identify designated heritage assets, including statutorily listed buildings, scheduled monuments, registered parks and gardens and registered battlefields and Conservation Areas. It is noted that heritage assets are finite resources that cannot be replaced if lost or damaged by development. As a general guide, a distance of 1.5km has been used to identify receptors, but it is recognised that some heritage assets may have extensive settings far beyond this threshold. Therefore, the Historic Environment Statements prepared for the Council for each site option will be drawn on to identify potential effects on designated heritage assets and any non-designated heritage assets that could be affected by minerals development. These statements also identify potential for unknown heritage assets to exist within or adjacent to sites.

It is recognised that any part of the county could contain archaeological features, which could be exposed or damaged through minerals development, therefore specific proposals should consider the potential archaeology of the area.

Table B.3: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 3: Cultural heritage, architecture and archaeology (Conserve and enhance the historic environment and deliver well-designed

Appendix B How Specific Sites and Preferred Areas Options will be Appraised

and resource-efficient development which respects local character and distinctiveness)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Contain or lie adjacent to a designated heritage asset*	--
Significantly compromise a designated heritage asset* through inter-visibility or clear impacts on setting through other disturbance. (This will be appraised through a desk-based assessment and therefore will be uncertain as actual effects will depend on actual inter-visibility which cannot be determined at this strategic scale using desk-based assessment.)	--?
Negatively affect non-designated heritage assets or a locally important historic park and garden	-
Have potential to negatively affect below-ground archaeology	-?
Have no impact on cultural heritage, architecture and archaeology, due to distance from historic environment assets and/or conclusion in Historic Environment Statement	0
Protect and conserve the historic environment (note that this will depend on specific mitigation and restoration techniques)	+
Help restore or enhance the historic environment (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown impact on cultural heritage, architecture, and archaeology	?

*For the purposes of applying these thresholds, 'designated heritage assets' does not include locally important historic parks and gardens, which is a local, Worcestershire-specific designation.

SA Objective 4: Material assets

The appraisal of specific sites and preferred areas will consider the quality of agricultural land that could be affected. Agricultural land grades 1, 2 and 3a are considered best and most versatile. Where it is not possible to distinguish between grade 3a and grade 3b agricultural land, the precautionary principle will be adopted and it will be assumed that some grade 3a land may potentially be lost. This uncertainty will be recognised in the assessments. Natural England must be consulted for proposals that are likely to cause the loss of 20 ha or more best and most versatile agricultural land, if this is not in accordance with an approved development plan. Whilst any minerals sites allocated in the DPD will be part of a development plan, the 20ha threshold has been adopted as a proxy for significance of effects.

Green Belt will be considered as a material asset in this assessment in line with its five purposes, as set out in the NPPF. Note that Green Belt is a policy designation, rather than a landscape or other sustainability designation. In addition, the NPPF states that mineral extraction may not be inappropriate in the Green Belt provided it preserves its openness and does not conflict with the purposes of including land within it. As such, uncertainty will be recorded for sites in the Green Belt, as whether development would be considered appropriate in the Green Belt depends on the exact nature of development, which will not be known until the planning application stage. Impacts on landscape of sites and areas within or outside of the Green Belt are considered under SA objective 1: Landscape.

Table B.4: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 4: Material assets (Ensure efficient use of land through safeguarding of best and most versatile agricultural land, land

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of Green Belt value, maximising use of previously-developed land and reuse of vacant buildings)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Lead to the loss of at least 20 ha of Grade 1 agricultural land	--
Lead to the loss of at least 20 ha of Grade 2 or 3 agricultural land, or less than 20 ha of Grade 1 agricultural land	-
Lead to mineral extraction sites within the Green Belt	-?
Have no impact on material assets	0
Lead to loss of less than 20 ha of Grade 2 or 3 agricultural land	0
Lead to mineral extraction sites on previously-developed land (<50% of the spatial option)	+
Lead to mineral extraction sites on previously-developed land (≥50% of the spatial option)	++
Have an unknown impact on material assets	?

SA Objective 5: Water quality

The appraisal will consider how specific sites and preferred areas relate to known areas of water quality concern, such as Source Protection Zones as well as waterbodies in general. 'Waterbodies' are considered to include rivers, streams, brooks, lakes and ponds of more than 10m² (this is the minimum size for relevant features shown in Ordinance Survey's Open Map Local data). Very small, unnamed pools and drainage ditches are not included in this term.

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Table B.5: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 5: Water quality (Protect and enhance water quality)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Be within any part of a Source Protection Zone 1	--
Include or be adjacent to an existing waterbody	--
Be within any part of Source Protection Zones 2 or 3	-
Have no impact on water quality	0
Protect and maintain existing waterbodies (note that this will depend on specific mitigation and restoration techniques)	+
Enhance water quality and/or restore degraded waterbodies (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown impact on water quality	?

SA Objective 6: Air quality

Minerals development can affect air quality through emissions of air pollutants, for example, nitrous oxides, sulphur dioxide and particulates, both as a result of on-site operations, as well as emissions of vehicles travelling to and from the site.

The location of Air Quality Management Areas and Air Quality Consultation Area for Concern will be identified using GIS data, and the potential impacts that the DPD's spatial options could have on these will be considered.

Proximity to sensitive receptors will also be considered, as these are places where people's health could be adversely affected by poor air quality. Sensitive

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receptors include places with a concentration of children or other more vulnerable people, such as schools and hospitals, and where people spend a lot of time, or time outside, such as residential areas and outdoor leisure and recreation facilities. This does not include footpaths and cycleways, as use of these will be transient, with people passing through relatively quickly.

Whilst there is no standard threshold for how far air pollutants may travel from minerals sites, the Design Manual for Roads and Bridges (DMRB) [See reference 127] highlights that air pollution from traffic disperses to negligible levels within 200m of the road. It has been assumed that air pollution from minerals workings is likely to be dispersed over a similar distance. Note that dust emissions are considered under SA objective 10: Health and amenity.

Table B.6: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 6: Air quality (Protect and enhance air quality)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Be within any part of an AQMA	--
Include or be adjacent to sensitive receptors (schools, residential areas, hospitals, faith centres, outdoor leisure and recreation facilities).	--
Generate traffic likely to pass through an AQMA	-
Be within 200m of (but not adjacent to) sensitive receptors (schools, residential areas, hospitals, faith centres, outdoor leisure and recreation facilities).	-
Be within an Air Quality Consultation Area for Concern	-
Have no impact on air quality	0
Maintain and protect existing areas of good air quality (note that this will depend on specific mitigation and restoration techniques)	+

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Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Improve air quality within an AQMA or Air Quality Consultation Area for Concern (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown impact on air quality	?

SA Objective 7: Climate change and energy

The location of individual sites will not have an effect on levels of energy consumption and the potential for renewable energy use on-site. These factors would be influenced more by the specific design and construction methods used, and whether renewable energy infrastructure is to be incorporated in the development, which will depend on planning policies and/or specific development proposals. As such, all specific sites and preferred areas will be assessed as having uncertain effects on this objective for policy-off assessments.

The location of specific sites and preferred options will result in greenhouse gas emissions as a result of vehicle movements to and from the site, including minerals transport, employee travel and travel to and from any after use of the site. In order to avoid duplication, this is considered under SA objective 12: Traffic and transport. In addition, soils and natural habitats, particularly woodland and wetlands, play a role in carbon storage. Disturbance to these can result in increased greenhouse gas emissions and restoration of these can increase carbon storage. Natural habitats can also help adaptation to the effects of climate change, by helping to manage flood risk and local temperatures. Effects on soils are considered under SA objective 4: Material assets, effects on natural habitats are considered under SA objective 2: Biodiversity and geodiversity, and effects on flooding are assessed under SA objective 8: Flooding.

Table B.7: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 7: 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)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Result in a net substantial increase in greenhouse gas emissions	--
Result in a net minor increase in greenhouse gas emissions	-
Have no impact on climate change and energy use	0
Incorporate energy efficiency measures (note that this will depend on specific mitigation measures)	+
Include renewable energy generation (note that this will depend on specific mitigation and restoration techniques)	+
Be net zero or carbon negative (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown impact on climate change and energy use (all site and preferred area options)	?

SA Objective 8: Flooding

The Worcestershire Mineral Site Allocations DPD Level 1 Strategic Flood Risk Assessment (SFRA) produced for Worcestershire County Council will be used to identify overall risk of flooding. The recommendations for application of the sequential test at proposed mineral sites (Table 17 of the SFRA), which includes information on the areas of each site at risk of flooding and vulnerability of sites to flooding, will be reflected in the assessments.

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The SFRA indicates that the greatest sources of flooding likely to affect minerals sites are fluvial (from rivers and streams) and surface water flood risk (often a result of high peak rainfall intensities, particularly when paired with insufficient capacity in the sewer network).

With regards to groundwater flood risk, minerals workings tend to excavate below the water table, but often operate a pumped drainage system to overcome this. The SFRA notes that this will be most appropriately addressed in a site-specific Flood Risk Assessment at the planning application stage.

Reservoir flooding is considered to be a rare event with a very low probability of occurrence, particularly as the Flood and Water Management Act seeks to ensure reservoirs are properly maintained and monitored to prevent this. Given the rural location of minerals development, sewer flooding is generally not a significant risk. Canal flooding is also considered rare, since water levels are managed throughout the year and it is envisaged that most minerals sites are unlikely to be located near a canal.

The SFRA identified that only a small number of the mineral site options at the time of writing were in areas benefitting from flood defences, but that, due to likely pathways of flooding, existing flood defences offer little protection to these sites. As such, the SA will not take into account existing flood defences. The SFRA highlights planned and potential flood management schemes in the area, noting these may benefit some sites. This will be reflected in uncertainty recorded against effects identified for this SA objective.

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

Table B.8: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 8: 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)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Result in non-sand and gravel extraction (i.e. “less vulnerable” development) in areas at significant risk of flooding, as identified in the SFRA	--
Result in water compatible development, where some sources of flooding are identified and site-specific FRA is recommended by the SFRA.	-?
Have no effect, as the SFRA identifies the site as being water compatible and/or not at significant risk of flooding from any source.	0
Provide flood storage capacity in areas identified in the SFRA as not being at significant risk of flooding (note that this will depend on specific mitigation and restoration techniques)	+
Provide flood storage capacity in areas identified in the SFRA as being at significant risk of flooding (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown impact on flooding	?

SA Objective 9: Access to green space

The SA will use GIS to identify how the spatial elements of the DPD could affect green space and public rights of way, including bridleways and public footpaths. Green space includes green and open areas available for recreational use, such as allotments, parks, playing fields and golf courses. Ordnance Survey green space data will be used to identify existing green spaces. ‘Green space’

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in this context refers to green space that can be used and accessed for leisure and recreation, including freely accessible green spaces, such as parks and public rights of way, as well as partly accessible green spaces, such as golf courses and allotments, which are often only accessible via paid membership.

Restoration of minerals sites could include creation of new freely or partly accessible green space, although this will depend on specific restoration techniques. The impact of new green space creation will be measured based on whether the area already has good access to green space. This will be based on the percentage of land accessible for recreation by Lower Super Output Area in Worcestershire data, as presented in the Worcestershire Green Infrastructure Framework, access and recreation [\[See reference 128\]](#).

Table B.9: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 9: Access to green space (Improve the quality of, and equitable access to, open space/green infrastructure and public rights of way)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Lead to mineral extraction sites located where one or more Public Rights of Way crosses the site	--
Lead to loss of freely or partly accessible green space	--
Lead to mineral extraction sites located where one or more Public Rights of Way, or areas of freely or partly accessible green space, is adjacent to the site	-
Have no impact on access to green space	0
Improve access to public rights of way and freely or partly accessible green space in areas in the top 50% with regards to access to green space (note that this will depend on specific mitigation and restoration techniques)	+
Improve access to public rights of way and freely or partly accessible green space in areas in the bottom 50% with regards	++

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Minerals development within the specific site or preferred area will, or is likely to...	SA rating
to access to green space (note that this will depend on specific mitigation and restoration techniques)	
Have an unknown impact on access to green space	?

SA Objective 10: Health and amenity

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

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

Minerals sites are often restored to uses that attract wildlife, such as creation of waterbodies. This can attract birds to the area, which can pose a risk to aviation safety (and consequently human health and safety) by impairing control

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of aircraft. Various national guidance documents, including the Civil Aviation Authority’s Safeguarding of Aerodromes document, explain that 99% of bird strikes occur below 2000 feet, which is commonly reached by aircraft around 13km from the runway. As such, increased bird strike is considered a risk for any minerals sites within 13km of an airport or airfield. Birmingham Airport is the only airport on the government's list of 'officially safeguarded civil aerodromes' that is within 13km of the county, therefore risk of bird strike will only be considered in relation to this airport.

Whilst opportunities for exercise and recreation also impact health and wellbeing, these are considered under SA objective 9: Access to green space.

Table B.10: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 10: Health and amenity (Improve the health and well-being of the population and reduce inequalities in health)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Be within 100m of more sensitive receptors (schools, residential areas, outdoor leisure and recreation facilities)	--
Be within 13km of an officially safeguarded civil aerodrome	--
Be within an area through which an electricity transmission line passes	-
Be within 100m of less sensitive receptors (industrial/business areas)	-
Be within 1km of sensitive receptors (schools, residential areas, hospitals, faith centres, outdoor leisure and recreation facilities)	-
Have no impact on health and amenity	0
Include measures to protect and maintain health and amenity (note that this will depend on specific mitigation and restoration techniques)	+

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Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Will lead to improvements in health and amenity (note that this will depend on specific mitigation and restoration techniques)	++
Have an unknown impact on health and amenity	?

SA Objective 11: Waste

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

While the production and use of recycled and secondary aggregates contributes to moving waste up the waste hierarchy, the Site Allocations DPD will not influence this as the DPD relates to locations for extraction of primary minerals, as required by the MLP. Provision for recycled and secondary aggregate use is made through Policy 9 of the MLP (Contribution of Substitute, Secondary and Recycled Materials and Mineral Waste to Overall Minerals Supply).

Table B.11: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 11: Waste (Manage waste in accordance with the waste hierarchy:

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1) reduce, 2) reuse, 3) recycling and composting, 4) recovery, 5) disposal)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Contain or lie adjacent to existing waste infrastructure	--
Be within 250m of existing waste infrastructure	-
Have negligible or no impact on waste management infrastructure	0
Promote management of waste in line with the waste hierarchy (note that this will depend on specific mitigation and operational requirements)	+
N/A	++
Have an unknown impact on waste	?

SA Objective 12: Traffic and transport

The appraisal of traffic and transport will consider the likely impacts on traffic and transport arising from minerals development, including consideration of likely transport distances, routing and modes of transport. As well as transportation of minerals themselves, access to public and active transport links is considered, as these may be used by site employees and visitors/employees associated with after use of the site, once restored.

The appraisal will use GIS to identify potential options for transportation of minerals that could minimise road usage, namely potential water links. It is outside the scope of the SA to carry out detailed feasibility work into utilising existing rail and water links. Navigable waterways are identified in the emerging MLP, although these links would only be suitable if there was deemed to be a reasonable likelihood of the development of necessary infrastructure to access these routes, and this information is unknown. For these waterways, it may not

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be unreasonable to assume that movements by barge would be achievable (although where barges could move to would be governed by known restrictions), as this may simply require an access track to the waterside, a floating pontoon and some loading/unloading equipment. However, accessing railways is more complex and would require significant investment and agreements to be in place, and far more engineering to achieve access. As such, there will inevitably be a lower likelihood of rail transport being a feasible option unless existing infrastructure is in place or there is strong confidence that it would be delivered in a timescale that matches that of the DPD. For this reason, where potential water links could be available, minor positive uncertain effects will be identified, but it is assumed that new rail links for minerals sites would not be implemented within the life of the DPD.

The appraisal will also consider how far minerals development may be from potential end users, to understand the likely transport implications. The Mineral Products Association suggests that about 80% of mineral products are used within 48km (30 miles) of where they are worked [\[See reference 129\]](#), hence this has been used as a measure of proximity to markets.

The WCC Mineral Site Access Appraisal, prepared by Jacobs in February 2020, will also be used to consider the suitability of routes and roads site traffic is likely to travel on. In particular, the scoring for principle 3, *proximity to suitable roads*, and principle 4, *proximity of sites to settlements and likely routing through settlements*, will inform the SA assessments.

Table B.12: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 12:

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Traffic and transport (Reduce the need to travel and move towards more sustainable travel patterns)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Be in a location further than 48 kilometres from potential markets (existing built up areas and strategic development allocations)	--
Be further than 800m from any sustainable transport link (bus stops, railway stations, cycle paths or public rights of way)	--
Score 'poor'/'high' for one or both of principles 3 (proximity to suitable roads) and 4 (proximity of sites to settlements and likely routing through settlements) of the Mineral Site Access Appraisal	--
Require use of heavy fossil-fuelled vehicle haulage (i.e. no suitable water links exist within or adjacent to the spatial option)	-
Score 'moderate' for both of principles 3 (proximity to suitable roads) and 4 (proximity of sites to settlements and likely routing through settlements) of the Mineral Site Access Appraisal or score 'moderate' for one and 'good'/'remote' for the other	-
Score 'good'/'remote' for both of principles 3 (proximity to suitable roads) and 4 (proximity of sites to settlements and likely routing through settlements) of the Mineral Site Access Appraisal	0
Include or be adjacent to a navigable waterway	+?
Be within 800m of at least one sustainable transport links (bus stops, railway stations, cycle paths or public rights of way)	+
Be within 800m of three or more sustainable transport links (bus stops, railway stations, cycle paths or public rights of way)	++
Have an unknown impact on traffic and transport	?

SA Objective 13: Growth with prosperity for all

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

Table B.13: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 13: Growth with prosperity for all (Develop a knowledge-driven economy, the infrastructure and skills base whilst ensuring all share the benefits, urban and rural)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Contain or lie adjacent to an area allocated for employment development or proposed infrastructure delivery	--
Be within 250m of an existing or allocated area for employment development or infrastructure delivery	-
Have no impact on growth with prosperity for all	0
Provide new employment opportunities in areas outside of the 20% most deprived areas in the employment deprivation domain of the IMD	+
Provide training opportunities	+
Provide new employment opportunities within one of the 20% most deprived areas in the employment deprivation domain of the IMD	++
Have an unknown impact on growth with prosperity for all	?

SA Objective 14: Sustainable use of minerals

Sand and gravel and brick clay are the minerals considered most likely to contribute to construction of new developments, although crushed rock is also likely to be required for associated land uses, such as roads. It is noted that recycled materials may also be used in construction (but as noted above, recycled and secondary aggregates have been addressed in the MLP and the Site Allocations DPD is not expected to influence their production or use).

The appraisal will consider how far the DPD's approach supports future land use development by providing sufficient minerals to enable development of buildings and infrastructure. However, non-minerals development has potential to sterilise mineral resources if it is on land with underlying mineral deposits (thereby directly preventing access to minerals) or if it is on land close to mineral resources, as minerals extraction processes could lead to unacceptable impacts on the development. The SA will assess this by considering whether potential specific sites and preferred areas coincide with or are near to strategic development sites set out in local authorities' Local Plans. This objective focuses on potential land sterilisation. The potential effects of minerals development on health and amenity of those living and working nearby is assessed under SA objective 10: Health and amenity.

There is potential for positive effects where other types of land use development allocations (i.e. in Local Plans) are located on or close to potential minerals sites, if the minerals were worked prior to development. This could be considered an efficient use of land and, if worked minerals were utilised for the subsequent development on or near the site, this would eliminate the need to transport minerals to markets (note that distance to market is considered under SA objective 12: Traffic and transport). However, it cannot be known from the locations of specific sites and preferred areas whether minerals will be worked before subsequent use in nearby developments. In order to be precautionary it will be assumed that prior extraction will not take place when undertaking 'policy off' appraisals of potential specific sites and preferred options, therefore

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potential effects recorded will be uncertain. It is acknowledged that where minerals sites and other land use allocation sites overlap or are in close proximity, Worcestershire County Council would need to be consulted as part of the development management process carried out by the district/borough/city councils. This is expected to include discussions regarding whether prior extraction of minerals is required.

Table B.14: Thresholds to guide decision-making for the appraisal of spatial options in relation to SA Objective 14: Sustainable use of minerals (Safeguard mineral resources from loss by permanent sterilisation)

Minerals development within the specific site or preferred area will, or is likely to...	SA rating
Contain or lie adjacent to a strategic site allocation in a Local Plan, where prior extraction is not expected to take place	--?
Be within 250m of a strategic site allocation in a Local Plan, where prior extraction is not expected to take place	-?
Have no impact on development of buildings or infrastructure	0
Be within 250m of a strategic site allocation in a Local Plan, where prior extraction is expected to take place	+
Contain or lie adjacent to a strategic site allocated in a Local Plan, where prior extraction is expected to take place	++
Have an unknown impact on the provision of housing	?

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Bristol

12th Floor, Colston Tower, Colston Street, Bristol BS1 4XE
0117 929 1997
bristol@landuse.co.uk

Edinburgh

Atholl Exchange, 6 Canning Street, Edinburgh EH3 8EG
0131 202 1616
edinburgh@landuse.co.uk

Glasgow

37 Otago Street, Glasgow G12 8JJ
0141 334 9595
glasgow@landuse.co.uk

London

250 Waterloo Road, London SE1 8RD
020 7383 5784
london@landuse.co.uk

Manchester

6th Floor, 55 King Street, Manchester M2 4LQ
0161 537 5960
manchester@landuse.co.uk

landuse.co.uk

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