Hanson Aggregates UK

Westdown Quarry

Environmental Impact Assessment (EIA)

Scoping Report

Wood Environment & Infrastructure Solutions UK Limited – May 2020

Report for

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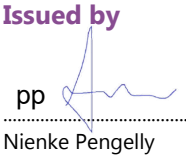

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Doc Ref. 40380-WOOD-XX-XX-RP-O-0001_S3_P02

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Document revisions

No.	Details	Date
1	Draft scoping report	04/05/20
2	Final scoping report 40380-WOOD-XX-XX-RP-O-0001_S3_P02	07/05/20

Contents

1. Introduction

1.1 Overview of the Proposed Scheme

1.1.1 Hanson UK Ltd (hereinafter referred to as Hanson) plan to recommence working at Westdown Quarry, near Frome in Somerset (hereafter referred to as 'the Proposed Scheme'). Westdown Quarry has the benefit of the following planning permissions:

- Interim Development Order (IDO) permission dated 23/10/1992 (Ref. IDO/M/1/A); and
- Review of Old Minerals Planning Permission (ROMP) for the winning and working of limestone dated 04/11/1998 (Ref. 016248/005)[1].

1.1.2 Both historic permissions were registered with Somerset County Council (the Minerals Planning Authority) in accordance with the provisions of the Planning and Compensation Act 1991 (for the IDO consent) and the Environment Act 1995 (for the ROMP consent). In accordance with these registrations, working cannot recommence until the Minerals Planning Authority (MPA) has agreed an updated scheme of planning conditions in line with modern environmental standards.

1.1.3 Further details of the Proposed Scheme can be found in **Chapter 2: The Proposed Scheme**.

1.2 The applicant and the project team

1.2.1 This Scoping Report has been prepared on behalf of Hanson by Wood Environment & Infrastructure Solutions UK Ltd (hereafter referred to as 'Wood').

1.2.2 Wood is registered with the Institute of Environmental Management and Assessment (IEMA)'s Environmental Impact Assessment (EIA) Quality Mark scheme. The scheme allows organisations that lead the co-ordination of EIAs in the UK to make a commitment to excellence in their EIA activities and have this commitment independently reviewed.

1.3 Purpose of this Scoping Report

1.3.1 This Scoping Report has been prepared as part of an EIA relating to the Proposed Scheme. EIA is required because it is considered that the proposed recommencement of extraction at Westdown Quarry meets the criteria for EIA development under Schedule 1 of *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017*[2] (hereafter referred to as the 'EIA Regulations').

1.3.2 The Proposed Scheme requires EIA because it falls within the descriptions of development under paragraph 19 of Schedule 1, as it comprises *"Quarries and open-cast mining where the surface of the site exceeds 25 hectares, or peat extraction where the surface of the site exceeds 150 hectares"* and it is likely to have significant environmental effects.

[1] The ROMP relates to three former planning permissions of smaller parcels:
- Ref. 15343 dated 28/02/1952;
- Ref. 24765 dated 29/10/1954; and
- Ref. 24765A dated 02/01/1967.

[2] *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017* [online]. Available at: http://www.legislation.gov.uk/uksi/2017/571/contents/made

1.3.3 This Scoping Report has been issued to Somerset County Council together with a discretionary request for a Scoping Opinion under the EIA Regulations. To inform this request, the following information is included in this report, as required under Regulation 15 of the EIA Regulations:

- A plan sufficient to identify the land;
- A brief description of the nature and purpose of the development, including its location;
- An explanation of the likely significant effects of the development on the environment; and
- Such other information or representations as the person making the request may wish to provide or make.

1.3.4 Under the EIA Regulations, once a request for a Scoping Opinion has been issued to the determining authority, it is required to consult with the consultation bodies (as defined in the EIA Regulations) and to issue the developer with a pre-application opinion within five weeks of the date of receipt of the request. The opinion of Somerset County Council is being sought on the following:

- The environmental topics that should be assessed within the Environmental Statement (ES);
- The likely significant effects of the Proposed Scheme;
- Those effects that are not likely to be significant and do not need to be considered further;
- The approach to defining the study areas for each environmental topic;
- The data that has been gathered (and will be gathered);
- The assessment methods that will be used to determine likely significant effects;
- The approach to determining the environmental measures that could be incorporated into the Proposed Scheme to avoid, reduce or, as a last resort, compensate for significant effects; and
- Developments that, together with the Proposed Scheme should be subject to cumulative assessment.

1.4 Structure of this Scoping Report

1.4.1 The remainder of this Scoping Report is structured as follows:

- **Chapter 2: The Proposed Scheme** provides a description of the Proposed Scheme;
- **Chapter 3: Legislation and planning policy context** provides an overview of the legislation and policies that are relevant to the Proposed Scheme;
- **Chapter 4: The Environmental Impact Assessment Process** explains the approach that has been taken to identify the scope of the EIA;
- **Chapter 5**: set out the proposed scope and methodology for each technical topic where a significant environmental effect is likely to arise because of the Proposed Scheme. This chapter also identifies those effects that are scoped out of the EIA; and
- **Chapter 6: Summary** provides a summary of the proposed content of the ES.

2. The proposed scheme

2.1 Outline description of the site

2.1.1 Westdown Quarry is a dormant limestone quarry located approximately (~) 5 km to the southwest of Frome, in Somerset (OS ST 719 661). In total, the site measures ~67.4 hectares (ha) and is at an elevation of 145 m AOD along the southern boundary rising in a north-westerly direction to an elevation of ~160m AOD. Extraction last took place at this site in the late 1980s.

2.1.2 The quarry is bounded to the north by the Bulls Green Link Road, a quarry link road constructed in the 1990's and by the A361 to the south. To the west of the site is Asham Wood and to the east are agricultural fields. Hanson's flagship, rail linked quarry – Whatley Quarry – is located ~1.5 km north of the site and Aggregates Industries' Torr Works quarry is located ~0.5 km from the south-western boundary of the Westdown site, on the opposite side of Asham Woods.

2.1.3 The nearest groupings of residential receptors are those properties located in the hamlets of Chantry and Cloford, which are ~1 km north and south of the site, respectively. The village of Nunney is located ~1.5 km east of the site.

2.1.4 Access to Westdown Quarry is via the Bulls Green Link Road, to the north of the site. At present, there are two access points into the quarry – the first of these is located~150 m west of the junction with Stony Lane, and the second is a further ~800 m west of this.

2.1.5 The site location is illustrated in **Figure 2.1.**

2.2 Background to the development

2.2.1 Westdown Quarry is a mothballed limestone site which has not been substantively worked since the late 1980s. The planning history at Westdown is complex and dates back several decades. Broadly though, the principal consents at Westdown comprises:

- Registration of Interim Development Consent Order (IDO) (original reference 1248 dated 20 December 1947), now IDO/M/1/A dated 23 October 1992 (~54 ha); and
- Approval of Schedule of Conditions 016248/005[3.] dated 4 November 1998 (~ 14 ha).

2.2.2 The Westdown IDO Permission states that it is the view of the mineral planning authority that mining and working of minerals or the deposit of mineral waste did not take place to any substantial extent between 1 May 1989 and 20 April 1991. As such the Westdown IDO Permission is a "dormant IDO. This means that no further quarrying at Westdown can commence until a full working and reclamation scheme (including EIA) has been submitted and approved.

2.2.3 The ROMP approval was granted subject to conditions albeit not extensive. With the requirements primarily focusing around the following condition:

"*No winning and working of minerals, depositing of mineral waste or associated activities shall recommence at the site until a full working and reclamation scheme has been submitted to the Mineral Planning Authority in conjunction with an application under the Planning and*

[3] The ROMP relates to three former planning permissions of smaller parcels:
- Ref. 15343 dated 28/02/1952;
- Ref. 24765 dated 29/10/1954; and
- Ref. 24765A dated 02/01/1967.

Compensation Act 1991 in respect of IDO permission No. IDO/M/1/A dated 23 October 1992, and the scheme has been approved in writing by the Mineral Planning Authority and the 1991 Act application has been finally determined."

2.2.4 Total permitted reserves at Westdown Quarry are identified as ~160 million tonnes (mt) and whilst there has been no quarrying activity on the site since the late 1980s, consent was issued in January 2005 for construction of a concrete products factory, office, car parking and ancillary buildings on the northern part of the site (planning consent reference: 016248/006). This consent was not implemented and has now lapsed.

2.3 Reasons for the scheme

2.3.1 From its neighbouring rail-linked quarry at Whatley, Hanson presently supplies many local and UK wide markets – particularly in the south-east of England - with limestone aggregate and related products. Proposals for the re-profiling of the benches within the quarry as well as its deepening are currently the subject of a separate scoping exercise / planning submission.

2.3.2 The rail link at Whatley means that this quarry is only one of a handful across England that has the capacity to supply wider UK markets – and most notably, those markets in London and the south east of England, where geology dictates that the vast majority of crushed rock requirements must be met by imports of material from other English regions. The ability to supply these markets with material delivered via rail means that Whatley Quarry is considered a strategic aggregate quarry.

2.3.3 With an increasing demand for limestone from a range of national construction projects – most notably the recently approved High Speed 2 rail link from London to Manchester – there will be greater emphasis on rail linked quarries like Whatley to supply these more distant markets. This means that Hanson needs to carefully consider a strategy for ensuring that Whatley can continue to supply aggregates to the more distant, nationally significant construction markets, whilst still meeting the very important needs of the local south-west markets.

2.3.4 To achieve this, Hanson is seeking to secure the long-term resumption of permitted limestone extraction from Westdown Quarry. This would allow Whatley to focus on meeting the needs of the UK wide, rail-borne markets, as material from Westdown would supply the local road-borne markets.

2.3.5 To enable extraction to recommence at Westdown Quarry, a submission for new replacement planning conditions and restoration strategy for the site accompanied by an Environmental Impact Assessment will be made to Somerset County Council in respect of the entire Westdown Quarry site. The submission boundary is illustrated on **Figure 2.2**.

2.4 Description of the Proposed Scheme

Mineral extraction

2.4.1 Total permitted reserves at Westdown Quarry are identified as some 160 million tonnes (mt). It is proposed that extraction would be at a rate of ~ 2.0 million tonnes per annum (mtpa), with the mineral processed on site before being transported by road to local markets. This would clearly mean that the quarry would need to operate beyond its current permitted end date of 2042. However, as this is some considerable way off, it is proposed that a separate planning submission be made, closer to the end date of the current permissions, to extend the life of the quarry.

2.4.2 It is proposed that working would initially be focused in the north / north-western part of the quarry, and over time, move in a south-south-easterly direction. The limestone would be extracted

through drilling and blasting techniques, with each blast designed to minimise vibration and air overpressure. Any remaining top and sub-soils would be removed and stored in bunds no higher than 5 m around the perimeter of the site and it is anticipated that overburden material will be used as restoration fill material in the Asham Wood void area of the site i.e. the 'finger' of land shown on **Figure 2.2.**, located to the west of the main quarry site.

2.4.3 Extracted materials would be processed using mobile processing plant within the quarry, and to ensure safety and the free flow of traffic both on and off site, all HGV traffic to and from the quarry will utilise a new access point to be constructed off the Bulls Green Link Road. A new weighbridge, site office and staff welfare facilities, with associated parking, will also be constructed

Operating hours

2.4.4 The extant permissions for Westdown Quarry do not place any limitations on operating hours. Notwithstanding this, it is recognised that a modern, robust schedule of conditions for Westdown will need to outline the time during which the quarry can extract, process and transport aggregate materials. In this regard, is proposed that these operating hours are applied as follows:

2.4.5 Extraction, haulage, servicing, maintenance and testing of plant:

- 06.00 – 20.00: Monday – Friday; and
- 06.00 - 12.00: Saturday and Sunday.

No operations other than water pumping (if required) shall take place outside these hours, save in cases of emergency.

Restoration strategy

2.4.6 As required by existing legislation, prior to work recommencing at Westdown Quarry, a comprehensive and consolidated restoration scheme, which takes account the proposed landform changes, as well as the prevailing biodiversity and landscape attributes of the locality, will be prepared and submitted.

2.4.7 The ES will contain plans and accompanying text to describe the restoration proposals and approach being taken. The plans will clearly show the proposed final landform and the types of land cover and habitats proposed.

3. Legislation and planning policy overview

3.1 Introduction

3.1.1 This section sets out the legislation and planning policy context for the Proposed Scheme.

3.1.2 Each topic chapter in the Scoping Report (**Chapters 5**) includes topic specific legislation and a summary of the relevant planning policies where pertinent to the assessment. Legislation and planning policy will be used to guide the scope of the assessment and to inform the value ascribed to receptors.

3.1.3 The Environmental Statement (ES) will identify all the legislation and relevant policies which will be used to inform the scope and assessment of each environmental topic.

3.2 Legislative context

3.2.1 As discussed in **Chapter 1 : Introduction**, the Proposed Scheme is to be assessed under the EIA Regulations, specifically *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017*[2].

3.2.2 Other legislation of relevance to this EIA is that which relates specifically to the need to review old mineral planning consents i.e. *The Planning and Compensation Act 1991* and *The Environment Act 1995* – the former setting out the statutory provision for IDO permissions and the latter for ROMPs.

3.2.3 Any topic specific legislation is discussed within **Chapters 5** and **6**.

3.3 National planning policy

3.3.1 The application for Whatley Quarry must be assessed in the context of planning policy contained particularly within:

- The National Planning Policy Framework (NPPF).[4] (published in March 2012 and updated in July 2018 and February 2019); and
- Supporting technical guidance as set out in the National Planning Practice Guidance (NPPG)[5], first published in March 2014.

3.3.2 In terms of the former, particular consideration will be given to the policy set out in the following sections:

- Facilitating the sustainable use of minerals;
- Conserving or enhancing the natural environment;
- Promoting sustainable transport;
- Meeting the challenge of climate change, flooding and coastal change; and

[4] Ministry of Housing, Communities and Local Government (2019). Revised National Planning Policy Framework [online]. Available at: https://www.gov.uk/government/collections/revised-national-planning-policy-framework [Accessed 12 February 2020].
[5] Ministry of Housing, Communities and Local Government (2019). Planning Practice Guidance [online]. Available at: https://www.gov.uk/government/collections/planning-practice-guidance [Accessed 12 February 2020].

- Supporting a prosperous rural economy.

3.3.3 Consideration will also be given to the supporting technical guidance as set out in the NPPG. This will include reference to the following topics:

- Minerals;
- Air quality;
- Environmental impact assessment;
- Natural environment; and
- Water quality.

3.4 Local planning policy

3.4.1 Section 38 of the Planning and Compulsory Purchase Act 2004 requires decisions on planning applications to be made in accordance with development plan policy unless material considerations indicate otherwise.

3.4.2 The Development Plan for the site comprises:

- Somerset Minerals Plan: up to 2030 (Adopted 2015); and
- Mendip Local Plan Part I: Strategy and Policies 2006-2029 (Adopted 2014).

3.4.3 Table 3.1 seeks to summarise the provisions of the **key** policies (please note, this table is not an exhaustive list of all relevant policies, simply a summary of those key policies as being of particular relevant to Westdown Quarry:

Table 3.1 Relevant key policies and their implications

Policy reference	Commentary
Somerset Minerals Plan:	
SD1: Presumption in favour of sustainable development	Sets out the overarching approach that the Council will take to minerals development. The policy reflects the NPPF's presumption in favour of sustainable development.
DM1: Landscape and visual amenity	This policy states that planning permission for mineral development will be granted subject to the application demonstrating that: a) the proposed development will not generate unacceptable adverse impacts on landscape and visual amenity; and b) measures will be taken to mitigate to acceptable levels adverse impacts on landscape and visual amenity. All mineral development proposals must be informed by and refer to the latest, relevant character assessments, nationally and locally.
DM2: Biodiversity and geodiversity	This policy states that development will be granted subject to applications demonstrating that a) the proposed development will not generate unacceptable adverse impacts on biodiversity and geodiversity and b) measures will be taken to mitigate to acceptable levels adverse impacts on biodiversity and geodiversity and secure biodiversity net gain where possible.
DM4: Water Resources and Flood Risk	The policy supports the granting of planning permission for mineral development subject to demonstration that the proposal will not have an unacceptable adverse impact on future use of water resources; environmental value and visual amenity of the water resource; and drainage and flood risk.

Policy reference	Commentary
DM8: Mineral operations and the protection of local amenity	The policy states that planning permission will be granted for mineral development subject to the application demonstrating: a) that the proposed development will not generate unacceptable adverse impacts on local amenity; b) measures will be taken to mitigate to acceptable levels (and where necessary monitor) adverse impacts on local amenity due to: i. Vibration; ii. Dust and odour; iii. Noise; and iv. Lighting. The policy how the applicant intends to engage with local communities during the operational life of the site.
Policy DM9: Minerals transportation	Planning permission for mineral development will be granted subject to the application demonstrating that the road network serving the proposed site is suitable or can be upgraded to a suitable standard to sustain the proposed volume and nature of traffic without having an unacceptable adverse impact on distinctive landscape features or the character of the countryside or settlements. Particular regard should be given to: a) highway safety; b) alignment; c) proximity to buildings; d) air quality; e) the integrity of the road network including construction and any impacts on capacity; f) disruption to local communities. Proposals for mineral development that will generate significant transport movements must be supported by a Transport Assessment and Travel Plan. The Transport Assessment will need to demonstrate that appropriate consideration has been given to the alternatives to road transport, including rail, as a primary freight transport option. Alternatives to road transport should be pursued if they are demonstrated to be practicable and beneficial
DM10: Land stability	This policy requires the submission of a stability assessment to demonstrate that proposals will not have an adverse impact on the stability of neighbouring land or properties; and not result in watercourse channel instability either during the working phase of a minerals development or at any time after the cessation of mineral extraction operations.
DM12: Production limits and cumulative impacts	The Mineral Planning Authority will impose planning conditions to limit production where this is considered necessary and appropriate to prevent any unacceptable adverse impacts from the operation.
Mendip Local Plan Part I:	
Development Policy 1 – Local Identity and Distinctiveness	The policy states that: 1. All development proposals should contribute positively to the maintenance and enhancement of local identity and distinctiveness across the district. 2. Proposals should be formulated with an appreciation of the built and natural context of their locality recognising that distinctive street scenes, townscapes, views, scenery, boundary walls or hedges, trees, rights of way and other features collectively generate a distinct sense of place and local identity. Such features may not always be designated or otherwise formally recognised. Where a development proposal would adversely affect or result in the loss of features or scenes recognised as being distinctive, the Council will balance up the significance of the feature or scene to the locality, the degree of impact the proposal would have upon it, and the wider benefits which would arise from the proposal if it were approved. Any decisions will also take into account efforts made by the applicant to viably preserve the feature, avoid, minimise and/or mitigate negative effects and the need for the proposal to take place in that location.
Development Policy 4 – Mendip's Landscapes	The policy states that proposals for development that would, individually or cumulatively, significantly degrade the quality of the local landscape will not be supported. Any decision-making will take into account efforts made by applicants to avoid, minimise and/or mitigate negative impacts and the need for the proposal to take place in that location.
Development Policy 5: Biodiversity and Ecological Networks	The policy states that all development must ensure the protection, conservation and, where possible, enhancement of internationally, nationally or locally designated natural habitat areas and species. The policy also seeks to resist proposals with the potential to cause adverse impacts on protected and/or priority sites, species or habitats except where the impacts cannot be reasonably avoided; offsetting/compensation for impacts can be secured, other considerations or public interest clearly outweigh the impacts.

Policy reference	Commentary
Development Policy 8 – Environmental Protection	The policy states all development proposals should minimise, and where possible reduce, all emissions and other forms of pollution.
Development Policy 9 – Transport Impact of New Development	The policy states that where appropriate, development proposals must demonstrate how they will improve or maximise the use of sustainable forms of transport (particularly by means other than the private car), and shall include, where relevant, the submission of Travel Plans and/or Transport Assessments.

3.4.4 In addition to the Local Plan Part II: Sites and Policies is currently at examination. The draft plan does not therefore currently form part of the development plan. However, in accordance with the NPPF paragraph 48. Local Authorities may give weight to relevant policies in emerging plans according the stage of preparation, the extent to which there are unresolved objections, and degree of consistency with the NPPF.

3.5 Other consents required

3.5.1 The proposals at Westdown Quarry will require other consents, licences, permits, etc. These will be identified during the EIA and appropriate will take place with organisations such as the local planning and highway authorities, Natural England, the Environment Agency and others as appropriate.

4. The environmental impact assessment process

4.1 Overview

4.1.1 Environmental Impact Assessment (EIA) is a systematic process that must be followed for certain categories of project before they can receive development consent. It aims to identify a project's likely significant effects through the scoping process, and then assess those effects in an Environmental Statement (ES).

4.1.2 The EIA process should be systematic, analytical, impartial, consultative and iterative allowing opportunities for environmental concerns to be addressed in the design of a project. Typically, a number of design iterations take place in response to environmental constraints identified during the EIA process prior to the final design being reached.

4.1.3 The EIA process will identify the different methodologies used for the assessment and these should be based on recognised good practice and guidelines specific to each technical area as set out in **Chapter 5**.

4.2 EIA terminology

Impacts and effects

4.2.1 The terms *impact* and *effect* are often used synonymously and this can lead to confusion. For clarity, a cause and effect logic will be applied to the EIA of the Proposed Scheme, whereby impacts are the changes that arise because of the Proposed Scheme (e.g. changes in drainage pattern) and effects are the consequences of those changes (e.g. habitat becomes degraded by in the altered drainage pattern).

Types of effects

4.2.2 Paragraph 5 of Schedule 4 of the EIA Regulations states that the "*The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development.*" The ES will consider these types of effects, as may be appropriate, in the environmental topic chapters, in so far that individual topics are so affected. However, whilst some terms are self-explanatory, to assist we have provided a definition of most types of effects here to confirm how these terms will be applied throughout the ES, with cumulative effects being dealt with separately.

Direct effects

4.2.3 Direct effects are those that result directly from the Proposed Scheme.

Indirect and secondary effects

4.2.4 Indirect and secondary effects are those that result from consequential change caused by the Proposed Scheme. As such they would normally occur later in time or at locations farther away than direct effects. An example would be where water or gas pipes are damaged because of the Proposed Scheme, and the consequences of that damage is fire or flood risk to other receptors.

Transboundary effects

4.2.5 Transboundary effects are those effects that would affect the environment in another state within the European Economic Area (EEA).

Spatial and temporal scope

4.2.6 Spatial scope is the area over which changes to the environment are predicted to occur because of the Proposed Scheme. In practice, an EIA should focus on those areas where these effects are likely to be significant.

4.2.7 The spatial scope will vary between environmental topics and has been described with relation to each topic based on the information currently available. For example, the spatial effects of a development on landscape and visual amenity will likely cover a much greater area than that affected by noise. The spatial scope of each assessment may be refined for the ES in response to comments from consultees or further assessment work.

4.2.8 The temporal scope covers the time period over which changes to the environment and the resultant effects are predicted to occur and are typically defined as either being temporary or permanent.

4.2.9 The temporal scope for construction effects will be determined by the construction period of the Proposed Scheme; this varies for each of the proposed waste facilities. For operational effects, the temporal scope will be determined by the anticipated operational life of the Proposed Scheme (see **Chapter 2: The Proposed Scheme**).

4.3 EIA scoping

4.3.1 The results of the EIA process are reported in an ES and Schedule 4(4) of the EIA Regulations specifies that the ES should describe those:

> *"…factors…likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape."*

4.3.2 Regulation 4(2) of the EIA Regulations requires the interaction between these factors to be considered. In addition, Regulation 4(4) requires ESs to consider:

> *"…the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development."*

4.3.3 Establishing which aspects of the environment are likely to be significantly affected by a particular project is captured in the EIA scoping process. Scoping involves identifying the following:

- The people and environmental resources (collectively known as 'receptors') that could be significantly affected by the Proposed Scheme; and
- The work required to take forward the assessment of these potentially significant effects.

4.3.4 Our approach involves scoping being started at the outset of our work on the EIA, with the initial conclusions about the likely significant effects of the Proposed Scheme being set out in this Scoping Report.

4.3.5 The preparation of this Scoping Report has been informed by information about the legislative and policy context relevant to the Proposed Scheme. It has also been informed by the simple rule that, to be significant, an effect must be of sufficient importance that it could influence the process of decision-making for the Proposed Scheme or an element of it (the 'significance test').

4.3.6 The conclusion that is made using the significance test is based upon professional judgement, with reference to the Proposed Scheme description, and available information about:

- The magnitude and other characteristics of the potential changes that are expected to be caused by the Proposed Scheme;
- The sensitivity of receptors to these changes;
- The effects of these changes on relevant receptors; and (where relevant); and
- The value of receptors.

4.3.7 If the information that is available at this stage does not enable a robust conclusion to be reached that a potential effect is not likely to be significant, the effect is then taken forward for further assessment[6].

4.3.8 After the issue of this Scoping Report, the scope of the assessment may be progressively refined in response to comments from the determining authority and from consultees, together with environmental information resulting from survey or assessment work carried out in relation to the EIA, and the evolution of the project proposals. Any changes to the scope of the assessment will be detailed within the ES.

4.3.9 If necessary, changes to the Scoping Opinion will be agreed though consultation with Somerset County Council.

Overview of significant evaluation methodology

4.3.10 The receptors that could be significantly affected, and therefore be taken forward for consideration in further detailed assessment in the ES, are identified within each topic chapter. The approach that has been adopted to determine whether the effects on these receptors are significant is to apply a combination of professional judgement and a topic-specific significance evaluation methodology.

4.3.11 In applying this approach to significance evaluation, it is necessary to ensure that there is consistency between each environmental topic in the level at which effects are considered to be significant. Thus, it is inappropriate for the assessment of one topic to conclude that minor effects are significant, when, for another topic, only comparatively major effects are significant.

4.3.12 In order to achieve the desired level of consistency, the specialists responsible for writing each of the technical chapters in this Scoping Report have considered the 'significance test' to inform their decision on whether effects are likely to be significant or not and therefore require further consideration in the ES, as well as the relevant topic-specific significance evaluation methodology. This approach will also be adopted for the technical assessments to be included in the ES.

4.3.13 For some of the topics to be assessed in the ES, there is published guidance available about significance evaluation. Where such guidance exists, even if in draft, it will be used to inform the development of the significance evaluation methodologies to be used in the ES. For other topics, it will be necessary to develop methodologies without the benefit of guidance. This will involve technical specialists drawing on their previous experience of significance evaluation in EIA.

[6] Where an effect cannot be confirmed as being 'not significant' these will be 'scoped in' to the assessment

Evaluation matrices

4.3.14 Significance evaluation involves combining information about the sensitivity or value of a receptor, and the magnitude and other characteristics of the changes that affect the receptor. The approach to using this information for significance evaluation is outlined below.

Receptor sensitivity of value

4.3.15 The sensitivity or value of a receptor is largely a product of the importance of an asset, as informed by legislation and policy, and as qualified by professional judgement. For example, receptors for landscape, biodiversity or the historic environment may be defined as being of international or national importance; lower value resources may be designated as being sensitive or important at a county or district level.

4.3.16 The use of a receptor would also play a part in its classification. For example, when considering effects on the amenity of a human population, a receptor used for recreational purposes may be valued more than a place of work as the environmental quality of the recreational receptor is more likely to be an important part of that receptor's use.

Magnitude of change

4.3.17 The magnitude of change affecting a receptor that would result from the Proposed Scheme would be identified on a scale from minor alterations of change, up to major changes or the total or substantial loss of the receptor. For certain topics, the magnitude of change would be related to guidance on levels of acceptability (e.g. for air quality or noise), and be based on numerical parameters, whilst for others it will be a matter of professional judgement to determine the magnitude of change, using descriptive terminology.

Determination of significance

4.3.18 The determination of significance is derived with reference to information about the nature of the development, the receptors that could be significantly affected and their sensitivity or value, together with the magnitudes of change that are likely to occur.

4.3.19 Other than for environmental topics for which significance evaluation does not involve the use of matrices, sensitivity/value and the characteristics of environmental changes can be combined using a matrix (see **Table 4.1**). In addition, professional judgement is applied because, for certain environmental topics, the lines between the sensitivities or magnitudes of change may not be clearly defined and the resulting assessment conclusions may need clarifying.

4.3.20 Variations to this approach, which may be applicable to specific environmental topics, will be detailed in the relevant 'assessment methodology' sub-section contained in each environmental topic chapter.

4.3.21 Definitions of how the categories that are used in the matrix are derived for each topic are also set out in each environmental topic chapter, along with the relevant explanation and descriptions of receptor sensitivity, magnitude of change and levels of effect that are considered significant in terms of the EIA Regulations.

4.3.22 Within the matrix, reference is made to:

- Major effects, which will always be determined as being significant in EIA terms;
- Moderate effects that may be significant, although there may also be circumstances where such effects are considered 'not significant' based on specific scenarios and professional judgement; and

- Minor or negligible effects, which will always be determined as 'not significant'.

Table 4.1 Example significance evaluation matrix

		Magnitude of change				
		Very high	**High**	**Medium**	**Low**	**Very low**
Sensitivity/importance/value	**Very high**	Major (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Potentially significant)
	High	Major (Significant)	Major (Significant)	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)
	Medium	Major (Significant)	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)
	Low	Major (Significant)	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)
	Very Low	Moderate (Potentially significant)	Minor (Not significant)	Negligible (Not significant)	Negligible (Not significant)	Negligible (Not significant)

Note: Significant effects are those identified as 'Major'. 'Moderate' effects have the potential to be significant, however there may be some exceptions, depending on the environmental topic and the application of professional judgment.

4.4 Environmental measures

4.4.1 The EIA Regulations require an assessment to be undertaken of '*the development*' - not of the Proposed Scheme with and without mitigation. To meet this requirement, the assessments in the ES will consider any '*environmental measures*' identified for adoption during the scheme design process "*...to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment*" (see Schedule 4(7)) as inherent to the Proposed Scheme and will therefore be an assessment of residual effects. The Proposed Scheme will also incorporate, where possible, relevant good practice and enhancement measures.

4.5 Assessment of cumulative effects

Introduction

4.5.1 Paragraph 5(e) of Schedule 4 of the EIA Regulations refers to the need to consider *"the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources"*.

4.5.2 The requirement to consider 'existing and/or approved' development is echoed within Planning Practice Guidance (PPG), which notes:

"There are occasions, however, when other existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a proposed development. The local planning authorities should always have regard to the possible cumulative effects arising from any existing or approved development."

4.5.3 Two types of cumulative effects assessment (CEA) will be considered in the ES, as set out below.

Inter-project effects

4.5.4 For each environmental topic to be considered in the ES, an assessment will be undertaken of how the environmental effects resulting from the Proposed Scheme could combine with similar topic-related effects generated by other existing or approved developments that affect a common receptor.

4.5.5 The starting point for this is to determine the Zone of Influence (ZoI) from the Proposed Scheme for each receptor that could be likely to be significantly affected under each environmental topic.

4.5.6 Other existing or approved developments, where they are located within the ZoI for a given environmental topic, should be subject to CEA. The ZoI and scope of the CEA will be discussed and agreed with the relevant stakeholders before undertaking the assessment.

4.5.7 Further details on the CEA methodology and the developments proposed to be scoped into the CEA are included within **Chapter 5**.

Inter-related (intra-project) effects

4.5.8 The second type of CEA involves assessing whether any of the individual environmental topic effects resulting from the Proposed Scheme could combine to create effects that are greater than the sum of the individual effects on a given receptor.

4.5.9 The first step will be to identify the environmental topics that have common receptors, and then to consider whether the topic effects on any common receptors are likely to combine.

4.5.10 Because this combined assessment involves different environmental topic assessments that cannot robustly be combined, the outcome of this CEA in the ES will be reliant on the application of professional judgement from, potentially, several different technical specialists.

5. Scope of the assessment

5.1 Content of the ES

5.1.1 In accordance with the EIA Regulations and good practice, the ES will contain:

- A non-technical summary (which will be available as a standalone document);
- A description of the proposed development comprising information on the need for the development, alternatives that have been considered and a description of the development;
- Information about the consents required if the development is to proceed and the policy context to the development;
- A definition of the EIA process, including the various steps in the EIA process, terminology, and the assessment methodology;
- Separate chapters setting out the assessment relating to each environmental topic, including:
  - A description of baseline conditions, including information about how these might change during the course of the development;
  - A description of any measures that have been incorporated into the proposed development with a view to delivering environmental benefits;
  - The scope of the assessment and the methodologies adopted;
  - Assessments and evaluations of significance of predicted effects - dealing, in turn, with each receptor/resource that has been assessed in detail;
  - A summary of the evaluations of significance; and
  - Proposals for implementing environmental and mitigation measures.
- An assessment of cumulative effects; and
- An appraisal of the effects of the scheme against relevant planning and environmental policies.

5.2 Landscape and visual

Relevant policies and their implications for scoping

5.2.1 A summary of the relevant planning policies is given in Table 5.1.

Table 5.1 Relevant policies and their implications – landscape and visual

Policy reference	Policy issue
National policy:	
National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government (MHCLG), 2019) **Paragraph 170**	Paragraph 170 states that planning policies and decisions should contribute to and enhance the natural and local environment by (amongst other criteria) *"a) protecting and enhancing valued landscapes in a manner commensurate with their statutory status or identified quality in the development plan.* *b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;"*
National Planning Practice Guidance (NPPG) Minerals (MHCLG, 2014) **Paragraph 205**	With specific regard to mineral developments, this paragraph states that when determining planning applications, local planning authorities should (amongst other criteria) ensure that there are no unacceptable adverse impacts on the natural environment and that the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality are taken into account.
NPPG Minerals (MHCLG, 2014) **Paragraph 013**	The principal issues that mineral planning authorities should address, bearing in mind that not all issues will be relevant at every site to the same degree, include (amongst other criteria) visual impact on the local and wider landscape and landscape character.
NPPG Minerals (MHCLG, 2014) **Paragraph 039**	The planning application will need to include details of the proposals for land restoration and aftercare.
NPPG Minerals (MHCLG, 2014) **Paragraph 040**	This paragraph deals with the level of detail required on restoration and aftercare and the paragraph states that this is dependent on the circumstances of each specific site including the expected duration of operations on the site. It must be sufficient to clearly demonstrate that the overall objectives of the scheme are practically achievable.
Local policy:	
Somerset Minerals Plan (Somerset County Council (SCC), 2015) **Policy DM1**	This policy deals with landscape and visual amenity and states that the application will need to demonstrate that the proposed development will not generate unacceptable adverse impacts on landscape and visual amenity; and that measures will be taken to mitigate to acceptable levels adverse impacts on landscape and visual amenity. The LVIA must be informed by and refer to the latest, relevant character assessments, nationally and locally.
Somerset Minerals Plan (SCC, 2015) **Policy DM7**	Policy DM7 deals with the restoration and aftercare of mineral sites. Restoration and after-use proposals will be required to be submitted as part of the application which (amongst other criteria) clearly state how the criteria in the reclamation checklist (Table 7) have been met. Table 7 includes item 6 which states that consideration should be given to opportunities to "*minimise the overall amenity and visual impacts of mineral development on the surrounding environment and communities.*"
Mendip District Local Plan 2006-2029 Part I: Strategy and Policies (Mendip District Council (MDC), 2014) **Policy DP1**	Policy DP1 relates to local identity and distinctiveness and states that all development proposals should contribute positively to the maintenance and enhancement of local identity and distinctiveness across the district. The policy notes that proposals should be formulated with an appreciation of the natural context of their locality recognising that distinctive views, scenery, boundary walls or hedges, trees, rights of way and other features collectively generate a distinct sense of place and local identity.

Policy reference	Policy issue
Mendip District Local Plan 2006-2029 Part I: Strategy and Policies (MDC, 2014) **Policy DP4**	This policy refers to Mendip's Landscapes and states that proposals for development that would, individually or cumulatively, significantly degrade the quality of the local landscape will not be supported. The policy makes reference to Special Landscape Features (SLFs) as defined on the Policies Map. Asham Woods, Chantry is designated as a SLF and the LVIA will need to assess the effects upon their specific qualities as described in the 2012 '*Assessment of Special Landscape Features*.'. Outside of designated landscape areas, proposals should demonstrate that their siting and design are compatible with the pattern of natural and man-made features of the Landscape Character Areas, including cultural and historical associations, as detailed in the '*Landscape Assessment of Mendip District*.'
Mendip District Local Plan 2006-2029 Part I: Strategy and Policies (MDC, 2014) **Policy DP8**	With regards to environmental protection, the development either cumulatively or individually) will need to demonstrate that it does not give rise to unacceptable adverse environmental impacts on (amongst other criteria) light pollution and the proposals should make all reasonable efforts to minimise light pollution impacts.

Legislation

5.2.2 The following legislation is relevant to the assessment of the effects on landscape and visual receptors:

- The European Landscape Convention[7] (ELC) is a Council of Europe initiative that provides a broad framework for landscape planning and management across all member states including the UK, which ratified the ELC in 2007. The ELC defines landscape as, "*an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors.*" and is committed to several core principles and actions. These commitments are implemented by existing domestic policy and legislation rather than through any ELC-specific framework; and
- Hedgerows are protected in England and Wales under the Hedgerow Regulations 1997.

Technical guidance

5.2.3 The landscape and visual impact assessment (LVIA) will be conducted in accordance with the third edition of the *Guidelines for Landscape and Visual Impact Assessment* (hereafter referred to as GLVIA3) produced by the Landscape Institute and the Institute of Environmental Management and Assessment[8]. The guidance in this document is widely regarded by the landscape and planning professions as the 'industry standard' and a methodology based on GLVIA3 will be adopted together with best practice and professional experience.

5.2.4 The LVIA will also take account of other relevant technical guidance which includes (but is not limited to) the following:

- *Technical Guidance Note 06/19 Visual Representation of Development Proposals*, Landscape Institute (2019)[9]; and

[7] Council of Europe (2000) *European Landscape Convention* Statutory Instrument 2018 No. 834

[8] Landscape Institute and Institute of Environmental Management & Assessment (LI and IEMA). (2013). *Guidelines for Landscape and Visual Impact Assessment. 3rd Ed. Third Edition*. Routledge, London and New York.

[9] The Landscape Institute. (2019). *Technical Guidance Note 06/19 Visual Representation of Development Proposals* [online]. Available at: https://www.landscapeinstitute.org/visualisation/

- *Guidance on Undertaking Environmental Lighting Impact Assessments* (Professional Lighting Guide 04). Institution of Lighting Professionals (2013)[10].

Baseline conditions

Data gathering methodology

Summary of data sources

5.2.5 The EIA scoping exercise has been undertaken with reference to Chapter 2, supported by a review of relevant data sources. The principal data sources used to inform the assessment of potential effects comprises those set out in Table 5.2.

Table 5.2 Sources of desk study information

Source	Data
Ordnance Survey (OS) mapping	Explorer series scale 1:25,000 (Sheet 142 Shepton Mallet & Mendip Hills East))
Historic England	GIS dataset for Registered Parks and Gardens
Mendip District Council	District-level Landscape Character Assessment[11]
	District-level landscape designations[12]
Natural England	National Character Areas (GIS dataset and Profiles)[13]
Somerset County Council	Public Right of Way (PRoW) online mapping. Available to view at: https://roam.somerset.gov.uk/roam/map#
Sustrans	National Cycle Network maps Available to view at: https://www.sustrans.org.uk/national-cycle-network/
Google Earth Pro	Aerial photography (imagery date May 2018)

Zone of Theoretical Visibility

5.2.6 A Preliminary Zone of Theoretical Visibility (ZTV) has been generated to inform the Scoping Report and initial viewpoint selection. This Preliminary ZTV is shown in **Figure 5.1** and has been based upon a 5 m Digital Terrain Model (DTM) (OS Terrain 5).

5.2.7 The ZTV illustrates the topographic constraints on the visual influence of the existing ground level across the site but does not take account of the built elements or vegetation within the study area, both of which can significantly reduce the area and extent of actual visibility. As a consequence, a second ZVT has been prepared in which the DTM data has been amended to include areas of woodland and built form as depicted in OS VectorMap District to allow their screening effect to be

[10] Institution of Lighting Professionals. (2013). *Professional Lighting Guide 04 Guidance on Undertaking Environmental Lighting Impact Assessments*
[11] Chris Blandford Associates. (1997). Landscape Assessment of Mendip District. [online]. Available at: http://www.mendip.gov.uk/landscapeassessment1997
[12] Mendip District Council. (2012). Assessment of Special Landscape Features. [online]. Available at: http://www.mendip.gov.uk/evidencebaselandscape
[13] Natural England. (2013). National Character Area Profile: 141 Mendip Hills (NE416). [online]. Available at: http://publications.naturalengland.org.uk/category/587130

incorporated in the ZTV calculation. A conservative height of 10m has been used for the woodland exclusion zones with a height of 7.5m used for buildings. This Preliminary ZTV (with screening) is shown in **Figure 5.2**.

5.2.8 Further refinement of the ZTVs will be undertaken as part of the LVIA once detail with regard to the location and height of the tallest components of the development are known and can be incorporated into the model.

Current baseline conditions

5.2.9 A description of the wider landscape and visual context is set out below.

Topography and drainage

5.2.10 Westdown Quarry is sited at an elevation of 145m AOD along the southern boundary rising in a north-westerly direction to an elevation of ~160m AOD. The landform created by the existing Westdown Quarry and the valley of the minor watercourse which bisects the site are apparent within this general rise.

5.2.11 Beyond the site boundary, the landform continues to rise in a westerly direction towards the highest elevation within the LVIA study area. This is associated with the Cranmore Ridge which extends on an east-west alignment to the west of the site where elevations reach a maximum of 285m AOD. To the north of the ridge, the landform descends to form undulating ground around the head of the Mells River Valley. The valley landform runs west to east through the northern part of the LVIA study area and joins the Frome valley north of Frome. The Mells Valley is joined by a number of tributary valleys including those of Nunney Brook, Egford Brook and Fordbury Water.

5.2.12 Between the higher plateau around Cranford Ridge within the western half of the study area and the lower Frome valley along the eastern fringes, the landform is gently undulating with broad ridgetops but frequent steep sided sections in the Mells and tributary valleys.

Land use and vegetation patterns

5.2.13 Land use within the vicinity of the site is dominated by agricultural land with a typically irregular small field pattern bound by vegetated hedges and mature trees. The field boundaries typically comprise of native woody species.

5.2.14 A high proportion of woodland is present within the landscape and includes the larger woodland of Asham Wood, an ancient and semi-natural woodland. Other woodlands present in the landscape to the north of Westdown Quarry include Melcombe Wood and The Hare Warren as well as Tedbury Covert and an area of evergreen non-native plantation at Newbury Firs. The numerous valleys which cut through the study area are also well wooded including Whatley Bottom and the neighbouring Railford Bottom and Fordbury Bottom, all of which contain ancient and semi-natural woodland. Woodland is also present along Wadbury Valley and Finger Valley. Cranmore Plantation/Great Gains Wood/Battlefields Wood to the west of Westdown Quarry is a notable feature from within the wider landscape given its elevated location on the Cranmore Ridge and distinctive angular edges. To the south of the site, there is a higher occurrence of woodland including Monk Wood, Beach Wood/Innox Wood/Dungehill Wood/Common Wood, High and Lower Bitcombe Woods, Barrow Wood and the larger Postlebury Wood. Where woodland is less prevalent, the presence of high hedgerows and mature individual trees coalesce to heavily filter and screen views.

5.2.15 Beyond the agricultural land and woodland, the study area contains a number of active, inactive and dormant mineral workings. These include Whatley Quarry and Torr Works to the north and west of Westdown Quarry respectively

Settlement pattern

5.2.16 The largest settlement within a 5km offset from Westdown Quarry is the town of Frome, the western edge of which lies ~4.5 km to the east of the quarry. The closest settlements are the villages of Nunney, a nucleated settlement which lies ~1.2 km to the east and the smaller linear settlements of Chantry, located less than 1 km to the north. Despite the proximity of these settlement to Westdown Quarry, a preliminary field survey indicated limited intervisibility as a result of high levels of intervening tree belts, woodland and individual mature trees. A number of other villages are dispersed throughout the study area, with a higher occurrence found to the north of the site. Beyond the settlement boundaries, the landscape is sparsely populated by infrequent farmsteads.

Transportation network

5.2.17 The area around Westdown Quarry is characterised by a relatively dense road network. A high proportion of these roads are minor roads, often single-track lanes linking the dispersed settlements. The site visits demonstrated that these minor roads are often bound by tall hedgerows precluding outward views.

5.2.18 The principal routes are the A361 and A359 with the former routed along the southern edge of Westdown Quarry. A short section of the B3090 connects Frome with the A361. These routes carry fast moving traffic including HGVs associated with the numerous quarries and are a visual and aural characteristic in the landscape.

Recreational routes and facilities

National and Regional Trails and Cycle Routes

5.2.19 Two promoted long-distance footpaths have sections of their routes which pass close to Westdown Quarry as follows:

- The East Mendip Way is a 30 km (19 mile) walk which extends from Frome to link with the West Mendip Way near Wells and is subject to a published guidebook[14]. The route traverses the study area and passes ~0.5 km to the north of Westdown Quarry at its closest point; and
- The Macmillan Way comprises a 467 km (290 mile) waymarked route which follows existing footpaths, bridleway, byways and minor roads from Boston to Abbotsbury. The Way is routed through the LVIA study area and passes ~1.2 km to the east of Westdown Quarry at its closets point.

5.2.20 National Route 24 of the Sustrans National Cycle Network (NCN) is a 120 km (75 mile) route which runs from Bath Radstock, Frome, Warminster and Salisbury to join with National Route 23 at Eastleigh in Hampshire. Colliers Way coincides with the national route for much of its length within the study area. The Colliers Way extends for a distance of 37 km (23 miles) and forms part of National Route 24 making use of disused railway lines to provide traffic-free walking and cycling connected by country lanes. Both routes pass within 4 km to the northwest of Westdown Quarry.

Local Public Rights of Way network

5.2.21 The PRoW network provides a moderately high level of provision with strong connectivity between minor roads and settlements via a network of footpaths, bridleways and byways.

[14] Uphill to Frome: A Guide to the Mendip Way. David Wright, 2017

Open access land

5.2.22 There are a limited number of areas designated as open access land. Two small areas exist to the east and west of footpath FR 17/59 to the northeast of Cloford Common Farm whilst a further area is present at Mells Green on the western fringes of Mells.

Other recreational destinations

5.2.23 Other recreational interests are as follows:

- The East Somerset Railway is a 4 km (2.5 mile) heritage railway which extends between Cranmore and Mendip Vale. The route passes ~4.5 km to the southwest of Westdown Quarry at its closest point; and
- Cranmore Tower is a 45m high folly which offers elevated views from viewing platforms and is located ~3 km to the west of Westdown Quarry. The Tower is open on weekends, bank and school holidays and features a Tea Room. A series of walks, promoted on the Cranmore Tower website[15], are available including a circular walk through Asham Wood which follows bridleway SM 8/9 which runs through and along the boundary of Westdown Quarry.

Landscape Character

National Character Areas

5.2.24 At a national scale, Westdown Quarry lies within the eastern fringes of the Mendip Hills National Character Area (NCA), as defined in the NCA Profile 141: Mendip Hills[13]. Key characteristics of this NCA with specific regard to Westdown Quarry include:

"Large-scale quarrying of limestone is particularly active in the eastern Mendips with super-quarries such as Whatley and Torr Works, though two smaller quarries, Callow and Batts Combe, remain active in the western Mendips".

5.2.25 Other key characteristics of the landscape include:

- "*The plateau and hill tops are largely treeless, except for a few old ash pollards, wind-shaped shelterbelts and conifer plantations. The slopes and valleys surrounding the plateau have a wide range of woodlands forming an attractive mosaic with calcareous grassland and agriculture. There is a more wooded nature to the eastern Mendips"* (within which Westdown Quarry is located);
- *"Variable enclosure patterns with larger, rectangular 18th-century field patterns bounded by drystone walls on the plateau and smaller, irregular fields with hedgerows on the scarp slopes and eastern Mendips."; and*
- *"Villages are concentrated along the springline at the foot of the scarp slopes. Elsewhere, settlement is scattered. Characteristic church towers are visible from great distances and designed landscapes of country houses with wooded parks are prominent in the east."*

District Level Landscape Character

5.2.26 At a more detailed scale, Mendip District Council has undertaken a district-wide landscape character assessment (*The Landscape Assessment of Mendip District*[11]) which defines principal character areas, landscape character types (LCTs) and at a more refined level, landscape character areas (LCAs). The extant assessment indicates that Westdown Quarry is located partially within the

[15] www.crnmoretower.co.uk

South East Farmlands (A11) LCA and partially within the East Mendip Valleys- Chantry and Fordbury Water Valleys (A10.3) LCA. Other landscape types and character areas within 5 km of Westdown Quarry are shown on **Figure 5.3** and set out in Table 5.3.

Table 5.3 Mendip District Landscape Character Areas

Principal Character Area	Landscape type	Landscape character area (LCA)
Cotswolds Edge	5. Broad ridges with arable farming	C2: Buckland/Norton St Philip/Orchardleigh Park Ridges
East Mendip Hills	4. Flat arable land with small valleys	A7 Northern and Eastern Farmlands
	8. Steep-sided variable valleys with fast-flowing streams	A10.1 East Mendip Valleys- Netherbridge Valley
		A10.2 East Mendip Valleys- The Lower Mells River Valley
		A10.3 East Mendip Valleys- Chantry and Fordbury Water Valleys
		A10.4 East Mendip Valleys- Nunney, Nunney Brook and Egford Brook
	9. Rolling farmland with frequent arable	A11 South East Farmlands
		A12 Wanstrow Farmlands
	10. Irregular slopes and ridges with pasture	A9.1 Leigh/Binegar/Coleford Slopes – Leigh-Oakhill
		A9.5 Leigh/Binegar/Coleford Slopes – Holcome-Highbury-Coleford
Frome Valley	11. Wide irregular valley with mixed farmland	B1.2 The Upper Frome Valley – Valley Slopes
		B3 Frome and Frome Fringes
Batcombe Downs and Valleys	14. Open downland ridges	D1 The Downs, Slopes and Valley Heads

Landscape Designations

National landscape designations

5.2.27 The north-western edge of the Cranborne Chase and West Wiltshire Downs Area of Outstanding Natural Beauty (AONB) lies to the southeast of Westdown Quarry at a minimum distance of ~5.5 km. The location of this nationally designated landscape in relation to Westdown Quarry is shown in **Figures 5.1** and **5.2**.

Special Landscape Features

5.2.28 Asham Wood is designated in the *Mendip District Local Plan Part I Strategy and Policies 2006-2029* (2014) as a Special Landscape Feature (SLF) and protected under Policy DP4. The *Assessment of Special Landscape Features*[12] provides further details under a range of quality criteria and sets out how Asham Wood meets these criteria. The special qualities set out in the document will inform the assessment of effects in LVIA.

5.2.29 A second SLF as defined in the *Mendip District Local Plan* as the Mells Valley – east of Mells Village along the Mells River corridor lies to the east of Whatley Quarry.

Registered Parks and Gardens

5.2.30 Registered Parks and Gardens within 5 km of Westdown Quarry are as follows: Mells Manor House; The Chantry; Mells Park; Babington House and Marston House.

5.2.31 Effects upon Registered Park and Gardens are considered through an assessment of the visual effects experienced by visitors to these sites within an LVIA with effects upon their setting dealt with as part of a cultural heritage assessment. With respect to the former, it is noted that none of the sites within 5 km of Westdown Quarry are open to the public.

Visual context

5.2.32 The visibility and landscape influence of the Westdown Quarry site is primarily determined by the surrounding topography and availability of screening elements. The higher landform to the west of the site provides a degree of visual severance whilst the undulating landform and valleys to the east provide a local foreshortening of views. The exception to this is from the elevated ridge of land which extends northwards from close to Postlebury Wood before heading in an easterly direction towards the western edge of Frome. Within the landscape the high prevalence of woodland, tree belts, hedgerows and individual mature trees combine to reduce the extent of visibility further.

The scope of the assessment

Study area

5.2.33 The EIA scoping exercise for the LVIA has been based upon a LVIA Study Area of a 5 km offset from the site boundary. It has been defined to ensure that the LVIA concentrates upon receptors that are most likely to be significantly affected by the Proposed Scheme. The selection of the LVIA Study Area has been undertaken in accordance with guidance set out in Sections 5.2 and 6.2 in GLVIA3. The LVIA Study Area is shown in **Figures 5.1 – 5.3**.

5.2.34 The temporal scope of the LVIA is consistent with the period over which the Proposed Scheme would be carried out and therefore covers both the operational phases of the development (sub-divided into phases where appropriate) as well as the landscape and visual effects from the proposed restoration scheme.

Landscape assessment

5.2.35 The approach to the landscape assessment will involve the detailed consideration of the effects on three types of landscape receptors as follows:

- The first category of landscape receptors relates to the landscape elements that are located within the site boundary. The assessment will focus on the potential effects on the hedgerows, woodland, fields and other key landscape elements within site boundary that may be subject to direct physical effects. The assessment will consider the effects of the temporary or permanent removal and/or introduction of landscape elements as part of the operational phases and the restoration;
- The second group of landscape receptors relates to landscape character which can be defined at national and local level through the definition of Landscape Character Types (LCTs) and Landscape Character Areas (LCAs). In accordance with paragraph 5.14 of GLVIA3 it is proposed that the local Mendips LCAs are taken forward as landscape receptors on the basis that they represent much smaller, discrete areas that are more appropriate for use as landscape character receptors in LVIAs. Landscape sensitivity assessments would be undertaken as part of the LVIA

(to determine landscape value and susceptibility to the type of development proposed) in accordance with GLVIA3; and

- The third group of landscape receptors to be considered are the landscape designations whose special qualities may be directly or indirectly affected by the operational and restoration phases at Westdown Quarry.

Visual assessment

5.2.36 The proposed development has the potential to affect the views of visual receptors within the study area including residents and people using local roads and footpaths with views of the site. A review of OS mapping and aerial photography along with the preliminary ZTV (with screening) illustrated in **Figure 5.2** indicates that the following groups of receptors are likely to be included in the visual assessment:

- Residents in the community of Chantry;
- Recreational receptors using public rights of way (PRoW) which pass through or close to the site boundaries (i.e. Bridleway SM 8/9 and Footpath FR12/43);
- Recreational receptors using PRoWs to the southeast of Nunney (i.e. Footpaths FR 12/46, FR 12/17 and FR 12/45);
- Recreational receptors using PRoWs and open access land to the south of the A359, south of Westdown Quarry (i.e. Footpaths FR 17/59, FR 17/33 and FR 17/25);
- Recreational receptors using PRoWs which cross elevated land south of Wanstrow (i.e. Footpath FR 17/56 and Studley Lane, marked as 'Other routes with public access' on 1:25,000 OS mapping);
- Recreational receptors using the East Mendip Way promoted route; and
- Drivers and their passengers using the A361 and local road network.

5.2.37 Other visual receptor groups may also be considered in the LVIA following refinement of the Preliminary ZTV.

5.2.38 The visual assessment will be supported by photographic viewpoints presented in accordance with the *Technical Guidance Note 06/19 Visual Representation of Development Proposals*[9]. The preliminary viewpoint selection is included in Table 5.4 and illustrated in **Figures 5.1** and **5.2**.

Table 5.4 Preliminary viewpoint locations

Viewpoint reference	Location	Reason for Selection
1	Bulls Green Lane junction	Views available to users of Bulls Green Lane
2	Bridleway SM 8/9 close to the eastern edge of Asham Quarry	Close distance views from a local PRoW which passes through Westdown Quarry
3	Bridleway SM 8/9 close to the western edge of Asham Quarry	Close distance views from a local PRoW which passes through Westdown Quarry
4	Footpath FR12/43 (central location)	Close distance views from a central location along a local PRoW which follows the eastern boundary of Westdown Quarry
5	Footpath FR12/43 (southern location)	Close distance views from a southern location along a local PRoW which passes along the eastern boundary of Westdown Quarry
6	A361 close to the northern end of Footpath 17/15	Views available to walkers using the northern end of Footpath 17/15 and drivers and their passengers travelling eastbound along the A361 close to the site boundary
7	A361 southwest of the site	Views available to drivers and their passengers travelling eastbound along the A361. The viewpoint is also selected for a night-time photograph to demonstrated baseline lighting levels.
8	A361 west of the site	Views available to drivers and their passengers travelling eastbound along the A361.
9	East Mendip Way (FR 18/24) west of Rock House Farm	Views available to recreational receptors using a promoted route to the north west of Westdown Quarry. The viewpoint is also selected for a night-time photograph to demonstrated baseline lighting levels.
10	Holy Trinity Churchyard, Chantry	Views available to residents in the community of Chantry to the north of Westdown Quarry.
11	Old Wells Road	Views available to drivers and their passengers travelling along a minor road to the north west of Westdown Quarry.
12	Footpath FR 17/59 north of Postlebury Wood	Views available to recreational receptors travelling northbound along footpath FR 17/59 to the south east of Westdown Quarry.
13	Marston Lane on the western edge of Frome	Specific viewpoint selected to demonstrate the screening effect of vegetation in long-distance views from the edge of the largest settlement in the LVIA study area. The viewpoint is also selected for a night-time photograph to demonstrated baseline lighting levels.

Potential effects not requiring further assessment

Landscape effects

5.2.1 Potential landscape effects not requiring further consideration are summarised in the following paragraphs.

5.2.2 Landscape effects – National Character Areas:

- Whilst reference to the NCAs, whilst these provide landscape context, they are too extensive and generalised to potentially experience significant landscape effects. This approach is advocated by paragraph 5.14 of GLVIA3 and the smaller local authority LCAs are to be taken

forward as receptors in the LVIA. NCA 141 and other NCAs present within the LVIA study area will therefore not require further assessment and are scoped out of the LVIA.

5.2.3 Landscape effects – Landscape Character Areas. Effects upon LCAs are not entirely dependent on the presence of a visual effects pathway i.e. the landscape receptor being located within the Preliminary ZTV. Landscape effects can also be generated by changes to other perceptual characteristics impacting upon landscape qualities such as tranquillity. Hence the scope of the landscape assessment has been determined by reviewing the defined key characteristics of the LCAs in the LVIA study area and a consideration of the potential for these characteristics to be impacted by the proposed development at Westdown Quarry.

5.2.4 The following Mendips LCAs will not require further assessment and are scoped out of the LVIA:

- A7 Northern and Eastern Farmlands. This LCA lies almost entirely outside of the ZTV coverage with only very small and fragmentary pockets of intervisibility indicated close to Newbury Hill. Significant effects upon this receptor are therefore considered unlikely;
- A9.5 Leigh/Binegar/Coleford Slopes – Holcome-Highbury-Coleford. This LCA lies outside of the ZTV coverage and at sufficient separation distance (with Whatley Quarry present in the intervening landscape) for there to be no significant landscape effects upon its key characteristics and character as a consequence of the proposed development;
- A10.1 East Mendip Valleys- Netherbridge Valley. This LCA lies outside of the ZTV coverage and at sufficient separation distance for there to be no significant landscape effects upon its key characteristics and character as a consequence of the proposed development;
- A10.2 East Mendip Valleys- The Lower Mells River Valley. This LCA lies outside of the ZTV coverage and at sufficient separation distance (with Whatley Quarry present in the intervening landscape) for there to be no significant landscape effects upon its key characteristics and character as a consequence of the proposed development;
- B1.2 The Upper Frome Valley – Valley Slopes. The ZTV (with screening) illustrated in **Figure 5.2** indicates some highly fragmented and limited intervisibility with Westdown Quarry from along the A361 corridor on the northern edge of the LCA. However, the separation distance and absence of ZTV coverage from within the majority of the LCA indicates that significant landscape effects upon its key characteristics and character as a consequence of the proposed development are considered highly unlikely;
- B3 Frome and Frome Fringes. This LCA lies outside of the ZTV coverage and at sufficient separation distance for there to be no significant landscape effects upon its key characteristics and character as a consequence of the proposed development;
- C2: Buckland/Norton St Philip/Orchardleigh Park Ridges. Whilst there is some fragmented ZTV coverage from within the LCA (as shown in **Figure 5.2**), the separation distance from Westdown Quarry allied with the presence of other larger and closer mineral sites to the LCA means that significant landscape effects upon its key characteristics and character as a consequence of the proposed development are considered highly unlikely; and
- D1 The Downs, Slopes and Valley Heads. This LCA lies outside of the ZTV coverage and at sufficient separation distance (with the A361, railway and Torr Works present in the intervening landscape) for there to be no significant landscape effects upon its key characteristics and character as a consequence of the proposed development.

5.2.5 Landscape effects – landscape designations:

- Cranborne Chase and West Wiltshire Downs AONB. the proposed development would not significantly affect the defined Special Qualities of the AONB. This assessment is derived from a

review of the AONB's Management Plan[16], Integrated Landscape Character Assessment[17] and preliminary ZTV, which illustrates highly fragmented intervisibility between this landscape and Westdown Quarry as a consequence of the high proportion of woodland cover along the AONB's north western edge; and

- Mells Valley – east of Mells Village along the Mells River corridor Special Landscape Feature: This locally designated area lies entirely outside of the preliminary ZTV (with screening) coverage and the proposed development would not affect the qualities of this SLF as set out in the Assessment of Special Landscape Features[12].

Visual effects

5.2.6 Potential visual effects not requiring further consideration in the ES are summarised below:

- Visual effects cannot be experienced by visual receptors with no potential views of any component of the proposed development at Westdown Quarry i.e. those visual receptors located outside the Preliminary and subsequently refined ZTVs.

Assessment methodology

Overview

5.2.7 The assessment of the significance of landscape and visual effects is, according to GLVIA3 "*an evidence-based process combined with professional judgement.*" All assessments and judgements must be transparent and capable of being understood by others. Levels of landscape and visual effects are determined by consideration of the nature or 'sensitivity' of each receptor or group of receptors and the nature of the effect or 'magnitude of change' that would result from the operation of Westdown Quarry and its restoration.

Landscape assessment

5.2.8 The sensitivity of a landscape receptor e.g. a LCA, to a particular development is determined by the susceptibility of that landscape receptor to the changes identified as the result of a particular proposed development and its value. The methodology describes landscape sensitivity as high, medium or low.

5.2.9 Landscape value is determined by taking into consideration a range of attributes including: the presence or absence of landscape designations; landscape and scenic qualities; rarity and representativeness; conservation interests; recreational value; perceptual qualities; and historic and cultural value. It is also concerned with landscape quality and the physical state of a landscape receptor which could include consideration of the landscape receptor's intactness and the condition of individual landscape elements. The absence of landscape planning designations does not automatically mean that an area or landscape receptor is of low landscape value. Landscape susceptibility concerns the ability of a landscape receptor to accommodate the proposed development without undue consequences for the maintenance of the baseline situation. The landscape assessment will include analysis for each landscape receptor of the factors that have been assessed in the determination of its landscape value and the assessment of its susceptibility to the operation and restoration of Westdown Quarry. These will be set out in a proforma that will

[16] AONB Partnership, 2019 Cranborne Chase Partnership Plan 2019-2024. [online]. Available at: http://www.ccwwdaonb.org.uk/publications/aonb-management-plan-2019-24/

[17] Land Use Consultants, 2003, Cranborne Chase and West Wiltshire Downs AONB Integrated Landscape Character Assessment. [online]. Available at: http://www.ccwwdaonb.org.uk/outstanding-landscapes/landscape-character/

show how the assessment of the landscape value and landscape susceptibility have been combined to determine that landscape receptor's sensitivity.

5.2.10 The magnitude of landscape change resulting from the operation and restoration of Westdown Quarry will be assessed as high, medium, low or very low. In accordance with GLVIA3 the magnitude of landscape change takes into account: the size and/or scale of the change that would result from each identified landscape effect acting upon a landscaped receptor; the geographical extent over each identified landscape effect would be experienced; and the duration and reversibility of each identified landscape effect.

Visual assessment

5.2.11 The sensitivity of visual receptors will consider the susceptibility of the visual receptor to the visual change identified and the value that is likely to be attributed by the visual receptor to their baseline view. These are described as high, medium or low. The main influencing factors are:

- The occupation or activity of the visual receptor at each location;
- The extent to which the visual receptors' attention or interest is focused upon the available views;
- The importance and/or popularity of the view;
- The typical numbers of visual receptors to whom that view is available;
- In a link with landscape considerations, the context of a viewpoint in terms of landscape value and quality within a view; and
- Any indication of a view being valued such as the presence of interpretation boards, parking and seating facilities, it being referenced in a guidebook or marked on a published map.

5.2.12 The nature of visual effects or their magnitude of change resulting from the operation and restoration of Westdown Quarry will be assessed as high, medium, low or very low. The magnitude of visual change will described by reference to the scale of visual change; the contrast with the baseline view; separation distance; the duration over which a view is available; the angle of view; levels of screening; and whether new visual elements are seen on a skyline or against a background.

Cumulative LVIA

5.2.13 The LVIA will also include a section on potential visual effects that may occur where more than one existing, permitted or proposed mineral developments, could be seen either simultaneously from viewpoints or visual receptor locations, or sequentially from major road routes or promoted recreational routes. This will utilise, where available, existing ZTV mapping for proposed or existing schemes to determine theoretical areas of intervisibility between these schemes and Westdown Quarry. Consideration will also be given to the potential cumulative landscape effects as a result of the extraction and subsequent restoration of these sites.

Evaluating and explaining the significance of landscape and visual effects

5.2.14 The level of landscape and visual effects will be determined with reference to landscape or visual sensitivity and the magnitude of landscape or visual change likely to be experienced. For each receptor, the evaluation process will be informed by use of a matrix.

5.2.15 Likely significant landscape and visual effects arising from the operation and restoration of the proposed development would be effects that are assessed as being likely or certain to result in effects that would be 'major'. Effects assessed as being 'moderate' would have the potential to be

significant and whether they are assessed as significant or not significant will be justified in the detailed assessment for the relevant landscape or visual receptor. In line with the emphasis placed in GLVIA3[7] upon application of professional judgement, the adoption of an overly mechanistic approach through overreliance upon a matrix will be avoided. This will be achieved by the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor over and above the outline assessment provided by use of the matrix. Wherever possible cross references will be made to a visual assessment at the proposed viewpoints (to be agreed with consultees) and figures to support and explain the rationale.

5.3 Noise

Relevant policies and their implications for scoping

5.3.1 Table 5.5 lists the planning policy guidance and policies that are relevant to noise, and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.5 Relevant policies and their implications – noise

Policy reference	Implications
National policy:	
Noise Policy Statement for England, 2010 (NPSE)	NPSE sets out the vision and aims for dealing with noise (except for workplace/occupational noise). NPSE requires that noise and vibration assessments identify impacts that would result in significant adverse impacts on health and quality of life from a proposed development. The aims of NPSE include: avoiding significant adverse impact on health and quality of life; mitigating adverse impacts on health and quality of life; and to contribute to the improvement of health and quality of life.
National Planning Policy Framework, 2019 (NPPF)	The NPPF states that new development should contribute to and enhance the environment by preventing new and existing development from contributing to, or being put at unacceptable risk from, or being adversely affected by unacceptable levels of noise pollution.
National Planning Practice Guidance, 2014 (NPPG)	The NPPG relates in terms of a noise hierarchy the levels of perception to noise exposure with expected outcomes and required actions.

Policy reference	Implications
National Planning Practice Guidance (Minerals), 2014	The online National Planning Practice Guidance (NPPG), published in March 2014, state that the principal environmental issues of minerals working that should be addressed by mineral planning authorities, include (among others) noise associated with the operations. The main noise guidance from the NPPG (Paragraph: 021) states that: *"Mineral planning authorities should aim to establish a noise limit, through a planning condition, at the noise-sensitive property that does not exceed the background noise level (LA90,1h) by more than 10dB(A) during normal working hours (0700-1900). Where it will be difficult not to exceed the background level by more than 10dB(A) without imposing unreasonable burdens on the mineral operator, the limit set should be as near that level as practicable. In any event, the total noise from the operations should not exceed 55dB LAeq, 1h (free field). For operations during the evening (1900-2200) the noise limits should not exceed the background noise level (LA90,1h) by more than 10dB(A) and should not exceed 55dB LAeq, 1h (free field). For any operations during the period 22.00 – 07.00 noise limits should be set to reduce to a minimum any adverse impacts, without imposing unreasonable burdens on the mineral operator. In any event the noise limit should not exceed 42dB LAeq,1h (free field) at a noise sensitive property".* The NPPG also acknowledges that mineral operations can often incorporate some particularly noisy short-term activities, which may not meet the limits described above. Such activities may include soil-stripping, the construction and removal of baffle mounds, soil storage mounds and spoil heaps, construction of new permanent landforms and aspects of site road construction and maintenance. For such activities the NPPG (Paragraph: 022) states that: *"Increased temporary daytime noise limits of up to 70dB LAeq 1h (free field) for periods of up to eight weeks in a year at specified noise-sensitive properties should be considered to facilitate essential site preparation and restoration work and construction of baffle mounds where it is clear that this will bring longer-term environmental benefits to the site or its environs.* *Where work is likely to take longer than eight weeks, a lower limit over a longer period should be considered. In some wholly exceptional cases, where there is no viable alternative, a higher limit for a very limited period may be appropriate in order to attain the environmental benefits. Within this framework, the 70 dB LAeq 1h (free field) limit referred to above should be regarded as the normal maximum".*
Local policy:	
Somerset Minerals Plan (adopted 2015) **Policy DM8: Mineral operations and the protection of local amenity**	Policy DM8 states that applications for mineral development will eb subject to eh applicant demonstrating "a) that the proposed development will not generate unacceptable adverse impacts on local amenity; and b) measures will be taken to mitigate to acceptable levels (and where necessary monitor) adverse impacts on local amenity due to: [amongst other things] noise."

Legislation

5.3.2 Relevant legislation includes:

- The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) (EIA Regulations);
- The Control of Pollution Act 1974 (particularly Sections 60 and 61) (CoPA);
- The Environmental Protection Act 1990 (as amended by the Noise and Statutory Nuisance Act 1993) (particularly Section 79) (EPA);
- The Noise Insulation Regulations 1975 (NIR);
- The Noise Act 1996 (NA).

Technical guidance

5.3.3 Standards and guidance have been used to define the scope of the noise assessment. The main Standards and Guidance are summarised in Table 5.6 below.

Table 5.6 Summary of standards and technical guidance

Technical guidance	Summary
Operational road traffic noise – The Department of Transport Calculation of Road Traffic Noise, 1988 (CRTN)	Provides a calculation methodology for road traffic noise, which will be used if any increase in HGV numbers is likely to result in an increase of more than 1 dB(A) in road traffic noise.
Operational road traffic noise – Transport and Road Research Laboratory – Converting the UK traffic noise index $L_{A10,18hr}$ to EU noise indices for noise mapping, 2002 (TRL PR/SE/451/02)	A method for converting the road traffic noise indexes described in CRTN to produce outputs in the form of European Union indices, in particular *TRL Method 2* which outlines the conversion of the $L_{A10, 18hr}$ noise indices to the $L_{Aeq, 16hr}$ and $L_{Aeq,8hr}$ indexes.
Operational road traffic noise - Highways Agency Design Manual for Roads and Bridges, 2011 (DMRB)	Presents a methodology for determining impacts upon noise sensitive receptors from changes in road traffic noise due to road projects.
Operational sound - Acoustics – Attenuation of sound during propagation outdoors: Part 2 General Method of Calculation, 1996 (ISO 9613-2)	Defines a method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at distances from a source.
Institute of Environmental Management and Assessment Guidelines for Environmental Noise Impact Assessment, 2014 (IEMA)	Presents guidelines on how the assessment of noise effects should be presented within the Environmental Impact Assessment (EIA) process. The IEMA guidelines cover aspects such as; scoping, baseline, prediction and example definitions of significance criteria.
Extant Planning Consents	Cognisance of the extant planning consent conditions would also be made

Baseline conditions

Data sources

5.3.4 The assessment scope has been based upon the results of a desk study. The desk study has involved reviewing Ordnance Survey mapping and Google Earth imagery of the site and surroundings.

Summary of baseline conditions

5.3.5 There is no relevant information readily available to inform this scoping report, which quantifies the baseline acoustic environment at locations surrounding the quarry. Whilst other recent planning submissions (e.g. the 2017 submission in relation to the deepening of Tarmac's Halecombe Quarry) contains baseline noise monitoring data, the comparative age of this data and given that the locations of sensitive receptors differ, it has not been referenced in this document.

5.3.6 Review of Google Earth imagery indicates that the main source of noise at the hamlet of Chantry to the north of the site would be from the Bulls Green Link Road and from the operation of the existing Whatley Quarry. The main source of noise to properties at Cloford and Nunney is likely to be from traffic using the nearby main roads – notably the A361 and A359. The existing Aggregates

Industries operational quarry at Torr Works is also likely to be a source of noise to residents in the Cloford area.

Predicted trends

5.3.7 It is envisaged that sound contributions from road traffic sources would be expected to increase slightly in the future due to natural traffic growth and the impact of any new or amended development in the area.

The scope of the assessment

5.3.8 The proposed scope of the assessment will cover the following aspects:

- Description of the site and the main sound emitting sources;
- Identification of the appropriate sound criteria for the assessment;
- Identification of the nearest noise sensitive receptors (NSRs);
- Unmanned long-term background sound surveys at agreed locations (the NRSs if practically possible) around the development site;
- Determination of the ambient and background sound levels at each NSR;
- Evaluation of the predicted sound and vibration levels against the relevant criteria as agreed with Somerset County Council Environmental Health Professionals; and
- Outline appropriate mitigation measures if required.

Assessment methodology

5.3.9 Wood will undertake appropriate surveys to quantify the baseline acoustic environment in the vicinity of the receptors agreed with Somerset County Council. Subject to instrument and personnel safety, this is likely to entail as a minimum:

- A long-term sound level survey at a maximum of 4 No. locations, using an appropriate and calibrated Class 1 sound level meter (SLM) in an environmental protection case. Sound levels would be logged continuously in 15 minute periods over a full 24 hours for at least a period of 4-5 days including a weekend. This monitoring will form the basis of the background sound level for the assessments; and
- Monitoring of parameters such as LAeq,T, LA90,T, LA10,T and LAmax as a minimum would be captured and detailed notes of significant sound sources around each monitoring location would be made on deployment and collection of this instrument. In addition, a weather station would be installed capable of logging weather details in the same 15 minute periods as the SLM.

5.3.10 Potential locations for background monitoring are identified as follows:

- A residential property on the southern side of Chantry (it is noted that there are a small number of isolated properties on the south side of the hamlet, which are located ~05-0.75 km north of the existing and proposed access points to the site);
- A property on the western edge of Nunney, in the Primrose Hill area, which are located ~1.5 km east of the site;
- A property at Cloford– located ~1 km south of the site; and

- Farmhouse located immediately west of Asham Wood, off Tunscombe Lane and ~0.75 km west of the Asham void area of the site.

5.3.11 An ES chapter will be produced detailing the results of the above against relevant noise criteria, and an assessment of potential effects undertaken to determine the significance of any effects on identified receptors. An outline of any mitigation measures deemed necessary as a result of the assessment would also be provided.

5.3.12 Appropriate sound power level data for plant to be used for operational activities will be used for modelling of sound propagation from the proposed development to the agreed NSRs. The modelling will involve prediction of:

- Operational sound levels – predictions using methodologies identified in BS5228-1:2009+A1:2014. The predictions will be based upon the available data regarding the method of working the main phases of the quarry including any working method statement plans, scaled sections, plant type and numbers, vehicle movement details, etc. as provided by Hanson. These sound levels would be assessed against criteria derived from NPPG(M) 2014 and agreed with the relevant Environmental Health Professional. Any brief, sound reduction measures deemed necessary would be outlined; and
- Operational traffic noise – predictions of the relative increase in traffic noise levels would be undertaken where the traffic assessment indicates that there will be an increase of 25% or decrease of 20% in existing traffic levels along an assessed route, or if there is an increase of more than 1 dB(A) due to HGV traffic increases on the main route(s) to the quarry. Any increase would be assessed in terms of the criteria given in DMRB.

5.3.13 An ES chapter will be produced detailing the results of the above and including identification of LOAEL and SOAEL levels (as per NPSE). An outline of any mitigation measures deemed necessary as a result of the assessment will also be provided.

5.4 Vibration

Relevant policies and their implications for scoping

5.4.1 Table 5.7 lists the planning policy guidance and policies that are relevant to vibration and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.7 Relevant policies and their implications – vibration

Policy reference	Implications
National policy:	
National Planning Practice Guidance (Minerals), 2014	Blast vibration is referred to as one of "the principal issues that planning authorities should address" (Paragraph: 013). No further detail is provided.
Local policy:	
Somerset Minerals Plan (adopted 2015) Policy DM8: Mineral operations and the protection of local amenity	Policy DM8: Mineral operations and the protection of local amenity states that applications for mineral development will be subject to each applicant demonstrating "*a) that the proposed development will not generate unacceptable adverse impacts on local amenity; and b) measures will be taken to mitigate to acceptable levels (and where necessary monitor) adverse impacts on local amenity due to: [amongst other things] vibration.*"

Legislation

5.4.2 Relevant legislation includes:

- The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended) (EIA Regulations); and
- The Control of Pollution Act 1974 (particularly Sections 60 and 61) (CoPA).

Technical guidance

5.4.3 Standards and guidance have been used to define the scope of the vibration assessment. The main Standards and Guidance are summarised in Table 5.8 below.

Table 5.8 Summary of standards and technical guidance for vibration

Technical guidance	Summary
BS 7385-2:1993 *"Evaluation and Measurement for Vibration in Buildings, entitled Guide to Damage Levels from Ground borne Vibration"*	This standard gives guide values to prevent cosmetic damage to property. Between 4 Hz and 15 Hz, a guide peak particle velocity (PPV) value of 15 - 20 mms-1 is recommended, whilst above 40 Hz the guide value is 50 mms-1. These vibration criteria reconfirm "damage criteria" published by the US Bureau of Mines.
BS 6472-2:2008 *"Guide to evaluation of human exposure to vibration in buildings. Blast-induced vibration"*	BS 6472-2:2008 deals with the particular problems associated with periodic blasting within range of occupied buildings: the guidance is a formalization of established, widely recognized techniques common in industry. The Standard gives guidance on human exposure to blast-induced vibration in buildings. It is primarily applicable to blasting associated with mineral extraction.
Construction (vibration) British Standards Institution 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration, 2014 (BS5228-2:2009:A1:2014)	Provides guidance on the assessment of ground-borne vibration associated with activities such as demolition and construction. Annex E BS 5228- 2:2009+A1:2014, describes methods of estimating vibration emanating from proposed construction activities.
Department of Transport and Regions (DETR) research report on "The Environmental Effects of Production Blasting at Surface Mineral Workings". 1998	Government guidance on this subject is given within this document which also proposes example blasting conditions for planning consents.
Extant planning consents	Whilst the extant planning consents for Westdown Quarry do not contain any vibration related conditions, there are comparable conditions attached to the neighbouring Whatley, Torr Works and Halecombe Quarries which will be reviewed.

Baseline conditions

Data sources

5.4.4 The assessment scope has been based upon the results of a desk study. The desk study has involved reviewing Ordinance Survey mapping and Google Earth imagery of the Site and surroundings.

Summary of baseline conditions

5.4.5 There is no information available to quantify the blasting vibration environment at locations surrounding the quarry. Review of Google Earth imagery indicates that the main source of blasting vibration would be from the operation of the existing quarries at Whatley to the north (Hanson), Torr Works to the south west (Aggregate Industries) and Halecombe Quarry to the north-west (Tarmac).

Predicted trends

5.4.6 It is envisaged that the only activity that could potentially increase the magnitudes/frequency of blasting vibration would be due to increased activities on the consented quarries in terms of either frequency of blasting or the closer proximity of blasting operations to existing receptors. However, this is not considered likely.

The scope of the assessment

5.4.7 Variations in instantaneous charge weight used in blasting at any particular site have been seen to be closely related to variations in measured vibration magnitudes. Thus, it is the instantaneous charge weight, together with the distance from the blast that forms the basis for blast vibration prediction methodology.

Assessment methodology

5.4.8 It is assumed that any data from any ongoing blast vibration monitoring that has been undertaken around the site will be made available to aid in the production of a regression line for the quarry.

5.4.9 The accepted method of prediction is to plot measured peak particle velocities against a scaled distance value for each measurement location. When a number of such values are plotted on logarithmic axes a straight-line relationship is observed. This is the so-called blasting regression line. In almost all cases, a certain amount of data scatter would be evident, and so statistical confidence levels are also calculated by least squares regression analysis techniques and the best fit or mean (50%) line as well as the upper 95% confidence level are plotted. The latter forms the basis of most vibration regulations. Wood would collect any historic data from Hanson regarding vibration measurements from production blasting including the results of any test blasts. A regression line for Westdown Quarry would then be produced.

5.4.10 The regression line would be used to predict the vibration impact for blasting operations on the quarry on nearby properties in terms of the peak particle velocity (PPV). These PPV levels would be assessed against the latest Government guidance on the subject.

5.4.11 Any remedial measures considered necessary because of the blasting vibration assessment along with general recommendations would be put forward. It is envisaged that the same receptors used for the noise assessment will also be used for blasting vibration assessment.

Potential effects not requiring further assessment

5.4.12 Comprehensive investigations into the nature and effects of air overpressure with reference to its damage potential have been undertaken by the United States Bureau of Mines (USBM), which has reviewed the relevant other published data on this subject. The research has concluded that the weakest parts of most structures that are exposed to air overpressure are windows.

5.4.13 With respect to determining what constitutes significant effects in terms of air overpressure, specific levels have not been identified in the relevant UK Government guidance (e.g. NPPG). This is

mainly to do with the influence of weather conditions (very variable in the UK) on air overpressure, but also due to very high levels that would need to occur to cause structural damage.

5.4.14 In addition, British Standard (BS) 6472-2:2008, indicates in section 5.3 that the prediction of air overpressure is "almost impossible" and goes on to state that "*control of air overpressure should always be by its minimisation at source through appropriate blast design*".

5.4.15 A numerical assessment of air overpressure effects has therefore been scoped out of the assessment.

5.5 Air quality

Relevant policies and their implications for scoping

5.5.1 Table 5.9 lists the planning policy guidance and policies that are relevant to air quality, and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.9 Relevant policies and their implications – air quality

Policy reference	Implications
National policy:	
National Planning Policy Framework (2019)	Planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan.
National Planning Practice Guidance (2014)	This sets out guidance regarding the need for and scope of dust assessments.
Local policy:	
Somerset Minerals Plan (adopted 2015) Policy DM8: Mineral operations and the protection of local amenity	The policy states that planning permission will be granted for mineral development subject to the application demonstrating: a) that the proposed development will not generate unacceptable adverse impacts on local amenity; b) measures will be taken to mitigate to acceptable levels (and where necessary monitor) adverse impacts on local amenity due to: i. Vibration; ii. Dust and odour; iii. Noise; and iv. Lighting. The policy how the applicant intends to engage with local communities during the operational life of the site.

Legislation

5.5.2 Relevant legislation concerning air quality which will need to be considered in the ES includes:

- Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe;
- The Air Quality Standards Regulations 2010;
- The Air Quality Regulations 2000, as amended;
- The Environment Act 1995; and
- The Environmental Protection Act 1990.

Baseline conditions

Data sources

5.5.3 Current baseline conditions have been informed by monitoring data obtained from air quality assessments undertaken by Mendip District Council (and most notably the information contained in their 2018 Annual Air Quality Status Report, June 2018) and by estimates of background pollutant concentrations obtained from Defra's Pollution Climate Mapping (PCM) model. Consultation with the Environmental Health Officer (EHO) at Mendip District Council to discuss the scope of the assessment and obtain the latest monitoring data will take place prior to any assessment commencing. Dust deposition data collected around Westdown Quarry and the nearby Whatley Quarry will be summarised in the assessment.

Summary of baseline conditions

5.5.4 Particulate matter less than 10µg in aerodynamic diameter (PM10) is not monitored by Mendip District Council Nitrogen dioxide (NO2) concentrations are well below the annual mean Air Quality Objective (AQO) of 40µg m^{-3}, even in the nearest town - Frome. Furthermore, no Air Quality Management Areas (AQMAs) have been declared through the Mendip District Council area.

5.5.5 Table 5.10 presents estimated background concentrations of NO2, PM10 and PM2.5from Defra's national PCM model. The PCM model provides estimates of existing and future background air quality concentrations at a 1km grid square resolution using a 2013 base year. The PCM model is semi-empirical in nature: it uses data from the national atmospheric emissions inventory (NAEI) to model the concentrations of pollutants at the centroid of each 1km grid square but then calibrates these concentrations in relation to actual monitoring data.

Table 5.10 2018 estimated mapped background concentrations from Defra PCM model

Pollutant	Estimated annual mean concentration ((µg m^{-3})
NO_2	6.8
PM_{10}	13.1
$PM_{2.5}$	8.2

Predicted trends

5.5.6 There is a general expectation that pollutant levels will decline in future years due to the increase of newer, more efficient vehicles in the UK fleet mix. However, the degree of reduction in NO2 concentrations is still associated with a significant level of uncertainty, in part due to 'real-world' vehicle emissions continuing to exceed emission standards and laboratory test results, particularly for modern diesel vehicles. As a result of this uncertainty, the assessment will assume, as an initial worst-case approach, that there is no decline in pollutant concentrations from the existing baseline conditions. Should this overly pessimistic approach indicate significant effects, additional sensitivity tests will be performed.

The scope of the assessment

5.5.7 It is considered that the main issue would be nuisance dust, which is often a cause of public concern. Regular and persistent nuisance may affect local amenity and the level of concern, and

potential for nuisance, is normally directly related to the number and proximity of residential areas to the site.

5.5.8 The degree of nuisance experienced depends on the rate of deposition, and is discernible at two levels:

- Nuisance experienced when the dust cover is sufficient to be visible when contrasted to an adjacent clean surface, such as when a finger is wiped across the surface. This is particularly annoying when it occurs regularly over long periods; and
- Severe nuisance experienced when the dust cover is perceptible without a clean reference surface for comparison. This usually occurs over short periods during very dusty conditions.

5.5.9 Nuisance complaints are usually associated with periods of peak deposition, occurring during particular weather conditions. There is a "normal" level of dust deposition in every community and it is only when the rate of deposition is high relative to the norm that complaints tend to occur. The effects of dust on a community will therefore be determined by three main factors:

- The short-term dustiness during periods of dry weather;
- The frequency or regularity with which these occur; and
- The duration of the site activities that contribute dust.

5.5.10 The amount of dust that might cause complaint or nuisance in a particular circumstance is very difficult to determine and there are no statutory limits. Dust can be a statutory nuisance under Section 79 (1)(d) of the Environmental Protection Act (EPA) 1990 Part III Statutory Nuisances and Clean Air.

Assessment methodology

5.5.11 Dust and particulate matter emissions will be assessed using the method detailed in the Institute of Air Quality Management (IAQM) *"Guidance on the Assessment of Mineral Dust Impacts for Planning"* (2016). Hard rock, such as limestone is considered more likely to generate dust than other rock types. Assessment will therefore be required for receptors within 400 m of activities. The assessment will involve:

- Description of the existing PM_{10} concentration (and dust deposition rates where available);
- Description of the location of receptors and their relative sensitivities to PM_{10} concentration and dust deposition;
- Details of potential dust sources associated with the proposed development, including the activities and materials involved (including a brief outline of quantities, duration, methods of handling and storage, etc.) and the resulting potential for releasing dust;
- Description of the control/mitigation measures incorporated into the scheme (including design features, management controls (to be incorporated into the Dust Management Plan for the scheme);
- Prediction, of the likely PM_{10} and dust deposition impacts and resulting effects (on health, amenity, and/or ecology) at relevant sensitive receptors, and taking into account the following:
  - The likely magnitude of dust emissions (after control by measures incorporated into the scheme);
  - The likely meteorological characteristics at the site, and definition of 'high risk' criteria for the development of specific management processes;

- The dispersion and dilution afforded by the pathway to the receptors, taking into account distance, orientation, local terrain and features, and other relevant factors; and
- The sensitivity of the receptors to amenity, health and/or ecology effects; and any likely interactions.

- The residual PM_{10} and dust deposition impacts and their amenity, health and/or ecology effects;
- A conclusion on the significance of the overall residual air quality effect, i.e. whether "significant" or "not significant" in EIA terms;
- Where the effects are assessed as significant, appropriate further mitigation (including modification of site design) and control measures that could allow the proposal to proceed without causing significant adverse effects; and
- Proposals, where appropriate, for proportionate dust monitoring and reporting to check the ongoing effectiveness of dust controls and mitigation.

Potential effects not requiring further assessment

5.5.12 It is assumed that traffic movements would remain at the levels currently approved within the planning permissions for Whatley Quarry (see the traffic and transport section for further details. Therefore, assessment of road traffic emissions will not be carried out. Should any change in traffic flow be predicted this will be screened against the criteria for road traffic impacts detailed in the EPUK/IAQM guidance on *"Land-Use Planning & Development Control: Planning For Air Quality"*.

5.5.13 Other potential sources of emissions which may affect local air quality around mineral extraction sites include exhaust emissions from on-road and non-road mobile machinery (NRMM). Wood's own experience, coupled with guidance provided by the IAQM, suggests such emissions are generally not a significant contributor to local air quality. NRMM emissions will not therefore be considered in the assessment.

5.6 The water environment

Relevant policies and their implications for scoping

5.6.1 Table 5.11 lists the planning policy guidance and policies that are relevant to the water environment, and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.11 Relevant policies and their implications – the water environment

Policy reference	Implications
National policy:	
National Planning Policy Framework, 2019 (NPPF) Paragraph 149.	NPPF Para 149 states that "Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply".
National Planning Policy Framework, 2019 (NPPF) Paragraph 170.	NPPF Para 170 states that "wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans."
National Planning Practice Guidance, 2019 (NPPG)	This sets out guidance regarding the need for and scope of assessments on the impact of developments on water quality.

Policy reference	Implications
Local policy	
Somerset Minerals Plan (Adopted 2015) DM4: Water Resources and Flood Risk	The policy supports the granting of planning permission for mineral development subject to demonstration that the proposal will not have an unacceptable adverse impact on future use of water resources; environmental value and visual amenity of the water resource; and drainage and flood risk.
Mendip Local Plan 2006-2029: Part I: Strategy and Policies (Adopted 2014) Development Policy 8: Environmental Protection	The policy requires development proposals to demonstrate that they do not give rise to unacceptable adverse environmental impacts on (inter alia) "the quality of water resources, whether surface river or groundwater". Proposals must include an assessment appropriate to the type and extent of the impact and any associated risks.
Mendip Local Plan 2006-2029: Part I: Strategy and Policies (Adopted 2014) Development Policy 23: Managing Flood Risk	The policy requires the implementation of the sequential approach to flood risk management with development in areas at risk of flooding expected to be resilient and incorporate mitigation measures.

Legislation

5.6.2 Key legislative drivers relating to the water environment that have been considered are detailed below:

- The European Union (EU) Water Framework Directive (WFD): focuses on delivering an integrated approach to the protection and sustainable use of the water environment on a river basin scale;
- Environmental Permitting (England and Wales) Regulations 2010 (SI 2010 No. 676), as amended: includes requirements for the prevention of hazardous substances entering groundwater and the control of non-hazardous pollutants to avoid pollution of groundwater (from revoked the Groundwater (England and Wales) Regulations 2009);
- Water Resources Act 1991: states that it is an offence to cause or knowingly permit polluting, noxious, poisonous or any solid waste matter to enter controlled waters. The Act was revised by the Water Act (2003) which sets out regulatory controls for water abstraction, discharge to water bodies, water impoundment and protection of water resources;
- The Land Drainage Act 1991 & 1994: places responsibility for maintaining flows in watercourses on landowners and gives Local Authorities powers to serve a notice on landowners to ensure works are carried out to maintain flow of watercourses; and
- Floods and Water Management Act, 2010: sets out the Government's proposals to improve flood risk management, water quality and ensure water supplies are more secure. In December 2009, the Flood Risk Regulations were published, which transpose the EU Floods Directive into UK law and these cover the flood issues from the Floods and Water Management Bill.

Baseline conditions

Data sources

5.6.3 The key data sources used to inform this part of the Scoping Report are listed in Table 5.12.

Table 5.12 Sources of information

Topic	Aspect	Source of information
Geology	Solid and drift geology	British Geological Survey (BGS), Geological Survey of England and Wales 1:63,360/1:50,000 geological map series, New Series, Sheet 281, Frome, Solid and Drift (1965).
Hydrology	River network	OS, 1: 25,000, Explorer Sheet 142 Shepton Mallet & Mendip Hills East, Frome and Midsomer Norton
	Abstraction licensing strategies	Bristol Avon and North Somerset Streams WFD Management Area Abstraction Licencing Strategy https://www.gov.uk/government/publications/bristol-avon-and-north-somerset-abstraction-licensing-strategy
	Surface water quality	Catchment Data Explorer http://environment.data.gov.uk/catchment-planning/
	River flow and catchment descriptions	Centre for Ecology and Hydrology (CEH, 2018b) - National River Flow Archive On-line http://nrfa.ceh.ac.uk/ Monthly stream flow data from the Whatley Quarry hydrometric monitoring network.
	Flood risk	Flood Map (Environment Agency, 2018a) https://flood-map-for-planning.service.gov.uk/ Flood Estimation Handbook (FEH) Web Service (CEH, 2018a) https://fehweb.ceh.ac.uk/GB/map
Hydrogeology	Aquifer status	Environment Agency/British Geological Survey Aquifers Bedrock Designation map
	Groundwater levels	Groundwater level data from three boreholes at Westdown (Asham) Quarry: weekly intervals up to December 2003; monthly intervals up to September 2019 Hourly groundwater level data from two boreholes at Whatley Quarry.
	Groundwater protection zones	Environment Agency On-line Source Protection Zones Map
	Groundwater quality	Environment Agency River Basin Management Plan (cycle 2)

Geology

5.6.4 Westdown Quarry is located on the Carboniferous Limestone outcrop, on the southern limb of one of four periclines that make up the Mendip Hills. These periclines have cores of Old Red Sandstones overlain by up to 600 m of Carboniferous Limestone. The Black Rock Limestone subgroup is at outcrop across Asham Quarry and the majority of Westdown Quarry. In the eastern portion of the Westdown Site the Black Rock Limestone is uncomfortably overlain by ~15 m of Jurassic Inferior Oolite, which is in hydraulic continuity with the Carboniferous Limestone.

5.6.5 BGS Sheet 281 (1965) shows that the Black Rock Limestone dips to the south approximately 30 degrees. And within the nearby Torr Quarry, the Black Rock Limestone is observed dipping to the south at approximately 30 to 40 degrees. The Black Rock limestone is also seen at outcrop at the nearby Whatley Quarry, which is located on the northern limb of the anticline. The limestone is known to be well karstified throughout the Mendip Hills, however this is not believed to be the case to the south near Torr.

5.6.6 The limestone outcrops at Westdown are known to contain many impediments including folded mudstones (Avon Group) and muddy limestones in the basal Black Rock Limestone as well as heavy faulting in the northernmost section of the quarry. Elsewhere thick clay-hematite-calcite filled veins are present and the extent of weathering is significant. The southernmost area contains dolomoite and cherty limestones, calcite veins and vugs as well as caves and fissures.

5.6.7 The north to south trending Downhead Fault, located approximately 2.5 km west of Westdown Quarry, juxtaposes Old Red Sand Sandstone in the west against the younger downthrown Black Rock Limestone in the east. Other major faults include the West to East trending Leighton Fault to the south of Westdown Quarry and Cranmere Fault to the southwest.

5.6.8 A relatively small area of superficial Head deposits overly the Black Rock Limestone toward the south of the Westdown site.

5.6.9 Borehole logs from the surrounding area have been inspected. There are basic logs for five Asham Quarry boreholes. These logs suggest that the Limestone is encountered beneath approximately 2 m of overburden, and is present to depths of at least 102 m. There is little distinction between limestone units, with descriptions merely commenting on colour, with no overview of fossil content, which is generally used to divide the Carboniferous Limestone into distinct sub-units. The logs do highlight a high degree of fracturing in places, as well as the presence of shale/limestone alterations that range from 5 to 10 m in thickness.

Hydrology

Drainage

5.6.10 Surface water drainage from both Westdown and Asham Quarry is to the Whatley Brook, which runs southwest to northeast through the western part of the site. The Nunney Brook also runs along the southeast edge of Asham Quarry; however, the catchment appears to roughly border the former working area.

Watercourses

5.6.11 Whatley Brook runs southwest to northeast within an incised valley from the origin on the Jurassic Strata to the SSW of Westdown. The brook flows through a culvert tunnel to the south of Torr Quarry and runs along the SE boundary of Torr Quarry before reaching Westdown. Downstream of Westdown, Whatley Brook flows through Chantry Pond before joining the River Mells near Frome.

5.6.12 Flow gauging data from Whatley Brook shows a consistent increasing trend in stream flow in the direct vicinity of Westdown Quarry. The increases in flow were 0.41 Ml/d in August, 0.97 Ml/d in September and 4.23 Ml/d in October 2018.

5.6.13 To the west of Asham Quarry, where water flows off the Old Red Sandstone on to the Carboniferous Limestone, there are several stream sinks that discharge at Whatley Brook. These are discussed further in the hydrogeology section below.

5.6.14 Nunney Brook lies directly to the southeast of Asham Quarry, flowing in a northerly direction.

Springs

5.6.15 Flow in Whatley Brook is supplemented by discharge from a group of springs known as the Seven Springs (NGR ST 713 455) which arise from the Carboniferous Limestone near Westdown Quarry on the northern side of Whatley Brook in Asham Woods (Figure 3).

5.6.16 Holwell Springs (NGR ST 729 451) arise from the Carboniferous Limestone at Nunney and feed into Nunney Brook.

Flood risk categorisation

5.6.17 Westdown Quarry is situated in Flood Zone 1, indicating a low probability of fluvial flooding, most likely due to the incised nature of Whatley Brook immediately to the north.

Hydrogeology

Aquifer designation

5.6.18 The Environment Agency's aquifer designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply), but also their role in supporting surface water flows and wetland ecosystems. The aquifer designation maps show the various aquifer types for both superficial deposits and the bedrock. These are accessible on-line and have been reviewed in order to correlate the geologic strata identified around the quarry from the geology maps with the various aquifer types.

5.6.19 The Carboniferous Limestone and Jurassic Inferior Oolite is classed as a Principal aquifer, i.e. layers of rock that have high intergranular and/or fracture permeability (high level of water storage) which may support water supply and/or river base flow on a strategic scale.

5.6.20 The superficial Head deposits to the south of Westdown Quarry is classified as a Secondary (undifferentiated) aquifer, i.e. lower permeability formations that may have local scale importance for water supply and river baseflow depending on localised features.

Groundwater levels

5.6.21 Groundwater levels have been monitored since 1994 at two boreholes in Asham Quarry and one in Westdown Quarry, providing a comprehensive time series of groundwater levels. Between 1994 and 2002, groundwater levels fluctuated between 122 m AOD and 140 m AOD in an average annual cycle. Groundwater levels then drop from 2002 onward, to a low of around 118 m AOD during summer and a high of 134 m AOD in winter.

Groundwater flow

5.6.22 Published groundwater contours show a regional trend of groundwater levels going from highs in the west to lower levels in the east towards Frome, reflecting the topography. This re-enforces the lack of connectivity between the Northern and Southern limbs of the Anticline with a flow divide located somewhere between Westdown and Whatley Quarry. Localised faults and karstic features influence groundwater flow patterns, as discussed below in the context of Westdown Quarry.

5.6.23 The available groundwater level data from the Asham Boreholes show that the groundwater flow varies between high and low groundwater levels, with a gentle hydraulic gradient (~0.05) from higher levels in the west to lower in the east.

Groundwater – surface water interactions

5.6.24 The north to south trending Downhead Fault, located approximately 2.5 km west of Westdown Quarry, juxtaposes Old Red Sand Sandstone in the west against the younger downthrown Black Rock Limestone in the east. A group of springs known as the Severn Springs are located near to Westdown Quarry, north of Whatley Brook in Asham Wood.

5.6.25 Groundwater levels indicate that the Seven Springs could potentially act as sinks in times of low groundwater level when the springs become inactive. Under these conditions there would be a potential loss of flow from Whatley Brook in this area.

5.6.26 It is also suggested that the Carboniferous Limestone of the Mendip Hills is the source of spring water than gives rise to the thermal hot springs, including the Bath Hot Springs ~40 Km north of Westdown. There are concerns that dewatering in order to extract Carboniferous Limestone could negatively impact spring water availability and quality. Quarries that neighbour Westdown including Torr and Whatley Quarry, have, however reported that no change in spring discharge has been identified that could be attributed to the Mendips, and that hydraulic connectivity between Bath Hot Springs and the area was considered very unlikely.

Predicted trends

5.6.27 The effects of climate change are expected to alter the baseline over time. As a result of climate change it is predicted that there will be an increase in peak rainfall intensities and resulting flood flows over time. The latest guidance on climate change allowances to be applied in England was last updated in April 2016[18] and provides guidance on the potential enhanced rainfall seasonality, with wetter winters and drier summers. This will, of course, have implications for river flows and groundwater levels, although these effects are difficult to quantify at present.

5.6.28 In addition, the location and rate of surface and groundwater abstractions in the area could vary over time, and increased understanding of the groundwater flow regime may result in changes to any aquifer status and SPZ designations.

The scope of the assessment

5.6.29 In consultation with the Environment Agency, the assessment will utilise existing data to achieve the following:

- Further develop the baseline description of the hydrology and hydrogeology in the Westdown Quarry area;
- Consider the potential effects of the Westdown Quarry proposals on surface water and groundwater; and
- Consider mitigation measures required to address these and other water-related concerns.

5.6.30 In accordance with existing requirements, a standalone Flood Risk assessment would also be produced and appended to the EIA.

Assessment methodology

5.6.31 The significance of an effect resulting from the proposals at Westdown Quarry will be primarily determined by the sensitivity (or value) of a given water feature and the magnitude of the effect. This approach provides a mechanism for identifying areas where mitigation measures are required and to identify the most appropriate measures to alleviate the risk presented by the development. The residual effects of the proposed development on the water environment will be evaluated assuming that identified mitigation are fully implemented.

5.6.32 In terms of hydrology and hydrogeology, the key determinants of magnitude relate to water quantity (level and flow), and groundwater quality. However, depending on the effects of surface

[18] Flood risk assessments: climate change allowances, Environment Agency, 2016 (https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances)

water flows, there may also be indirect effects on downstream morphology and sediment dynamics, river water quality and flood risk.

Potential effects not requiring further assessment

5.6.33 At this stage, it is not proposed to scope out any potential effects.

5.7 Biodiversity

Relevant policies and their implications for scoping

5.7.1 Table 5.13 lists the planning policy guidance and policy issues that need to be considered when defining the scope of the Ecological Impact Assessment (EcIA).

Table 5.13 Relevant policies and their implications – biodiversity

Policy reference	Implications
National policy	
National Planning Policy Framework, 2019 (NPPF) Section 15: Conserving and enhancing the natural environment Paragraph 170.	NPPF Paragraph 170 states that planning policies and decisions should contribute to and enhance the natural and local environment by (inter alia): protecting sites of biodiversity or geological value (commensurate with statutory status); recognising the wider benefits from natural capital and ecosystem services; minimising impacts on and providing net gains for biodiversity, including by establishing networks
NPPF Paragraph 175.	NPPF Paragraph 175 sets out the principles that local authorities should apply when determining applications. It states that applications should be refused if significant harm to biodiversity cannot be avoided, adequately mitigated or compensated for (at a last resort); land within or outside SSSIs should not normally be permitted.
NPPF Section 17. Facilitating the sustainable use of minerals NPPF Paragraph 204.	NPPF Paragraph 204 states that planning policies should (inter alia) set out criteria to "ensure that permitted and proposed operations do not have unacceptable adverse impacts on the natural … environment … taking into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality".
NPPF Paragraph 205.	NPPF Paragraph 205 states that mineral planning authorities should (inter alia) "ensure that there are no unacceptable adverse impacts on the natural … environment… and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality"
Local policy:	
Minerals Local Plan (Adopted 2015) Policy DM2: Biodiversity and geodiversity	This policy states that development will be granted subject to applications demonstrating that a) the proposed development will not generate unacceptable adverse impacts on biodiversity and geodiversity and b) measures will be taken to mitigate to acceptable levels adverse impacts on biodiversity and geodiversity and secure biodiversity net gain where possible.
Mendip Local Plan 2006-2029: Part I: Strategy and Policies (Adopted 2014) Development Policy 5: Biodiversity and Ecological Networks	The policy states that all development must ensure the protection, conservation and, where possible, enhancement of internationally, nationally or locally designated natural habitat areas and species. The policy also seeks to resist proposals with the potential to cause adverse impacts on protected and/or priority sites, species or habitats except where the impacts cannot be reasonably avoided; offsetting/compensation for impacts can be secured, other considerations or public interest clearly outweigh the impacts.
Mendip Local Plan 2006-2029: Part I: Strategy and Policies (Adopted 2014)	The policy requires development proposals to demonstrate that they do not give rise to unacceptable adverse environmental impacts on (inter alia) biodiversity. Proposals must include an assessment appropriate to the type and extent of the impact and any associated risks.

Policy reference	Implications
Development Policy 8: Environmental Protection	

Legislation

5.7.2 The EcIA will take account of the relevant legislation and regulations, including:

- The Conservation of Habitats and Species Regulations 2017 (as amended) (hereafter referred to as the 'Habitats Regulations');
- Wildlife and Countryside Act 1981 (as amended);
- Protection of Badgers Act 1992;
- Natural Environment and Rural Communities Act 2006 (NERC Act); and
- The Hedgerows Regulations 1997.

Baseline conditions

Data Sources

5.7.3 The Scoping Report is based on the following:

- An Ecological Desk Study utilising online information; and
- An Extended Phase 1 habitat survey of the site undertaken by Wood in March 2018.

5.7.4 A data-gathering exercise was undertaken to obtain information relating to statutory and non-statutory biodiversity sites; species or habitats of principal importance for the conservation of biodiversity; legally protected and controlled species; and other conservation-notable habitats or species. Given the potential for the proposed development to affect biodiversity resources located off- as well as on-site, data were obtained for:

- Statutory designated sites for nature conservation value within 5 km;
- Non-statutory designated sites for nature conservation value within 2 km;
- Legally protected species, Species of Principal Importance for the Conservation of Biodiversity in England, and/or other notable species previously recorded within 2 km of the site; and
- Habitats of Principal Importance for the Conservation of Biodiversity, or other notable habitats recorded within 2 km of the site.

5.7.5 The main sources of these ecological data are:

- The MAGIC website (www.magic.gov.uk) - the government environmental information partnership project; and
- Somerset Ecological Records Centre (SERC).

Summary of baseline conditions

Designated sites

5.7.6 There are 13 statutory designated sites of conservation value within 5km of the Site, comprising 2 sites of international importance (1 of which borders the Site) and 11 sites of national importance (including 3 that are adjacent to the Site or are within 100m of the Site). There are 19 non-statutory designated sites of nature conservation value within 2km of the Site including 1 local wildlife sites that is within the Site, and 3 which are adjacent to the Site. The sites are designated for a variety of reasons, including supporting valuable flora, fauna and geology.

5.7.7 Westdown Quarry is not designated for its nature conversation interest.

5.7.8 Tables 5.14 and 5.15 outlines the results of the search for designated nature conservation sites, and briefly summaries the pathways by which development of the site could impact the conservation site.

Table 5.14 Statutory designated nature conservation sites within the relevant search area

Site	Location relative to site	Summary of interest features
Mendip Woodlands SAC	Adjacent to northern Site boundary.	Primarily designated for supporting an extensive example of Tilio-Acerion forest on limestone.
Mells Valley SAC	Largest constituent area - 5km north west. Nearest constituent area - 3km north east.	Primarily designated for supporting a maternity colony of greater horseshoe bats, comprising 12% of the UK's population.
Asham Wood SSSI	Adjacent to northern site boundary.	Largest, most diverse and one of the most important ancient semi-natural woods in the Mendips.
Cloford Quarry SSSI	Adjacent to southern site boundary.	Geological
Holwell Quarries SSSI	0.1km south.	Geological
Leighton Road Cutting SSSI	1.2km south west	Geological
Postlebury Wood SSSI	2.3km south	Important undisturbed woodland.
Cookes Wood Quarry SSSI	3.2km north west	Geological
Edford Woods and Meadow SSSI	3.2km north west	Area supporting wide range of semi-natural ancient woodland and unimproved meadows and pastures.
Moons Hill Quarry SSSI	3.2km west	Geological.
Old Ironstone Works, Mells SSSI	3km north east	Important site for roosting greater and lesser horseshoe bats.
St. Dunstans Well Catchment SSSI	4.4km west	An area of nationally rare species-rich unimproved calcareous grassland. Small numbers of greater and lesser horseshoe bats hibernate in the cave system.
Vallis Vale SSSI	4km north east	Important ancient woodland site.

Table 5.15 Non-statutory designated nature conservation sites within the relevant search area

Site	Site reference code	Location relative to site	Summary of interest features
Asham Wood East LWS	ST74/078	Within Site	Ancient semi-natural broadleaved woodland.
Castlehill Wood LWS	ST74/004	Adjacent to northern site boundary	Strip of broadleaved woodland adjoining Asham Wood SSSI
Chantry Pond LWS	ST74/027	Adjacent to northern site boundary	Lake and stream with alder and willow carr, and predominantly broadleaved woodland.
Collie Corner Lane LWS	ST74/076	Adjacent to south eastern site boundary	Lane with mature trees and hedgerows supporting rich flora.
Railford Bottom Wood LWS	ST74/016	0.5km north	Stream valley with ancient semi-natural woodland and unimproved calcareous grassland
Baucombe Coppice South LWS	ST64/132	0.5km west	Semi-natural broadleaved coppiced woodland with occasional standards.
Hare Warren LWS	ST74/026	1km north	Largely replanted ancient woodland site.
Little Acre Wood LWS	ST74/097	1km north east	Part ancient semi-natural broadleaved woodland
Barrow Hill LWS	ST75/031	1km north east	Complex of herb-rich unimproved grassland, semi-improved grassland and semi-improved grassland with areas of semi-natural broadleaved woodland and scrub on hummocky south-facing slope.
Stubbs Wood LWS	ST64/012	1km south west	Long, narrow semi-natural broadleaved woodland on steep slope.
Railford Bottom LWS	ST74/017	1.5km north east	Semi-natural broadleaved woodland with rich ground flora in steep sided valley.
Cobby Wood LWS	ST74/007	1.7km north	Ancient semi-natural broadleaved woodland.
Norwood Fields LWS	ST64/217	1.7km south west	A mosaic of semi-improved, rough ground and steep margins.
Norwood LWS	ST64/042	1.7km south west	Ancient semi-natural broadleaved woodland.
Tadhill Quarry LWS	ST64/131	1.8km west	An andesitic quarry site with a mosaic of habitats including species-rich grassland, woodland, marsh, open water and spoil heaps.
Wood at Downhead LWS	ST64/065	1.8km west	Predominantly broadleaved woodland on south-facing site with streams and lakes.
Mells Park LWS	ST74/058	1.9km north	Broadleaved woodland and wood pasture with species-rich flora.
Melcombe Wood LWS	ST74/005	1.9km north	Mixed woodland on ancient woodland site.

Site	Site reference code	Location relative to site	Summary of interest features
Whatley Bottom LWS	ST74/018	2km north east	Ancient semi-natural broadleaved woodland along the steep sides of the Whatley stream.

Priority habitats

5.7.9 Priority habitats within 2km of the site comprise broadleaved deciduous woodlands and calcareous grassland. A number of the Local Wildlife Sites in Table 5.15 also contain areas of priority habitat.

Habitats on site

5.7.10 The northern extent of the site includes part of Asham Wood. Asham Wood is an extensive area of semi-natural broadleaved woodland, of which a large part, is included in the Mendip Woodlands SAC and Asham Wood SSSI designations. The SAC and SSSI designations do not cover the entirety of Asham Wood, and the site does not encroach within the designated areas.

5.7.11 Woodland within the site comprises frequent ash, hazel, oak, and maple, and in some locations, alder dominates. At the northern-most extent of the historic quarry voids, a distinct boundary edge to the woodland has formed, where woodland stands almost atop of the quarry void.

5.7.12 Within the historic quarry voids, several bunds/ramps/benches/tip-areas and mounds have provided areas onto which quick growing colonizers, principally silver birch, have self-seeded and grown vigorously, providing the most obvious evidence that habitats at the site have been left to regenerate undisturbed for an extended period. Where the substrate is shallower, or less suitable, on the quarry floor, species such as buddleia have colonised and grown vigorously creating some large areas of (densely) scattered scrub.

5.7.13 Whilst the Extended Phase 1 habitat survey was carried out during a cold March, which followed a particularly cold winter, the ground flora had not developed to it full extent. However, the understorey beneath historic semi-natural broadleaved woodland comprised, amongst others, primrose, wild strawberry, wild garlic/ramsons, wood anemone, dog's mercury and bluebell. Amongst the areas of more-recent self-seeded silver birch woodland belts, the understorey was largely missing, but during a survey with a different focus carried out in June bird's-foot trefoil and oxeye daisy were noted between areas of regenerating woodland and scrub.

5.7.14 The habitats at the site comprise a successional gradient, with mature woodland and rich understorey blending into less mature regenerating woodland, which in turn blends into scrub and ultimately bare earth. The range in the maturity of habitats is likely to be highly biodiverse and of significant conservation value.

5.7.15 To the south of the quarry void area (and comprising the remainder of the site) is farmland. This is intensively managed, improved pasture and arable fields bounded by hazel hedgerows. By contrast, this area is unlikely to be of significant value to local biodiversity.

5.7.16 In summary, areas of habitat at the site vary in type and maturity, and therefore the value of the individual areas to biodiversity also varies across the site. However, the gradation in habitat maturity, diversity of habitats and continuity of habitats with the designated areas is considered to be of high biodiversity value. Conversely the arable/improved grassland farmland landscape to the south of Westdown Quarry is of lower biodiversity value.

Fauna

5.7.17 With regard to fauna:

- **Commuting and foraging bats:** The site is judged to be of high value to bats, in particular greater and lesser horseshoe bats, for the following reasons:
  - The site provides high quality foraging and commuting habitat for bats and is situated amongst other high-quality habitats;
  - The site is situated between constituent sites of Mells Valley SAC and is within 3 km of one component of the SAC, which is primarily designated for supporting an internationally important population of greater horseshoe bats; and
  - There is a confirmed greater horseshoe bat roost within the site.

  Bats, including individuals from internationally important populations, will also therefore use habitats on site for commuting and foraging as well as roosting.
- **Bats – roosting:** It is understood (information supplied by Hanson) that a bat roost (greater horseshoe bat maternity and hibernation) is present in a conveyor tunnel within the northern part of the quarry and a roost (type not known) is present in buildings in the farmland (south-eastern) part of the site. These are unlikely to be the only roost locations within the site given the large areas of woodland that have potential to provide additional roosting opportunities;
- **Birds:** There is extensive areas of habitat on site, principally comprising the areas of woodland and hedgerows, which is suitable to support a notable assemblage of declining lowland, farmland bird species, both in the breeding and wintering seasons. Species of waders such as ringed plover and little ringed plover could make use of the habitats present within the quarry voids. Furthermore, the habitats are also suitable to support several species of raptor including peregrine falcon, hobby and goshawk;
- **Dormouse:** Dormouse requires diverse woodland/hedgerow habitats to successfully inhabit an area. The habitats at the site and the local surroundings meet this requirement and could therefore be of value to this species;
- **Great crested newt:** There are 11 water bodies within 500 m of the site. Of these, water bodies 7 are on land owned by Hanson. The remaining water bodies are on land outside of Hanson's ownership and it was not possible to visit these. Those located, and on land owned by Hanson, were subject to an HSI assessment (except for one, which could not be found). The water bodies achieved scores ranging between below average to excellent habitat suitability for great crested newts. Based on these results, the ponds were recommended to be subject to further assessment for the presence of great crested newt;
- **Badgers:** Suitable habitat for use by badger (foraging, commuting and sett creation) exists across the site, with only areas of bare quarry floor being unsuitable for sett creation;
- **Water vole and otter:** Fordbury Water, which flows through the centre of Asham and Westdown quarries, is suitable for use by both water vole and otter on a regular basis, and likely provides breeding opportunities for otter. These species are not likely to occur elsewhere on or near to the site;
- **Reptiles:** The site provides optimal habitat for grass snake, common lizard and slow worm. If present, reptiles could be present throughout the entirety of the quarry habitats but would be restricted to hedgerows/woodland/scrub around the arable farmland area to the south of Asham quarry;
- **Terrestrial and aquatic invertebrates:** The diverse habitats within the quarry areas have the potential to support notable terrestrial and aquatic invertebrate species; and

- **Other species:** The site is suitable to support species listed under S41 of the NERC Act 2006, such as hedgehog and brown hare, although no S41 species (other than those already discussed above) were seen during any visits to the site.

Predicted trends

5.7.18 In the absence of the Westdown project, substantial shifts in the overall baseline condition within the site are not predicted as current land use and management practices are likely to continue.

The scope of the assessment

EcIA overview

5.7.19 The EcIA approach is based on current Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the United Kingdom19. These guidelines recognise that an appropriate ecological assessment cannot consider in detail every individual species or habitat that may potentially be affected by a development. The scope of the EcIA is therefore based on outcomes of baseline surveys; the scoping exercise; other consultations and data; and the incorporated mitigation. These are used to identify those biodiversity receptors that could be 'significantly' affected by the proposed development (i.e. where the effects on the receptor are of sufficient concern that they could influence the decision about whether or not planning permission should be granted), or for which the development could result in the contravention of relevant legislation. EcIA should therefore focus on 'valued ecological receptors' (which may include legally protected species) that may be vulnerable (i.e. both exposed and sensitive) to the likely effects of the scheme. Receptors that are of sufficient value that an effect upon them would have the potential to be significant, together with all relevant legally protected species, are assessed. This involves:

- Identifying, for each receptor, any environmental changes that are likely to be caused by the proposed development (allowing for cumulative changes associated with other developments that are already built, are under construction or are likely to be constructed), which have the potential to lead to a significant effect and/or to contravene relevant legislation; and
- Determining the likely magnitude and hence significance of any effects, taking into account bespoke mitigation incorporated into the scheme design, or measures outlined in the proposal that are available, achievable and generally accepted as being effective for preventing significant effects (e.g. normal best-practice).

5.7.20 The assessment of effects considers the value of the receptor; the value of the site to that receptor; and the magnitude of change predicted. It also accounts for the environmental measures that will be employed to avoid or reduce potential adverse effects on biodiversity receptors; to prevent breaches of the legislation; compensate for adverse effects; and/or deliver environmental enhancement. This is typically a two-stage process, involving a 'screening' of receptors that cannot be significantly affected, followed by more detailed assessment of impacts on remaining receptors.

Scope of assessment

5.7.21 The EcIA will consider the potential for the scheme to affect protected or conservation-notable biodiversity receptors including:

[19]CIEEM (2016) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal. 2nd edition.* Chartered Institute of Ecology and Environmental Management, Winchester.

- European protected sites within 10 km;
- Other statutory and non-statutory sites designated for their nature conservation interest within 2km;
- Protected species, Section 41 species of Principal Importance for the Conservation of Biological Diversity, or other conservation-notable species recorded within 2km; and
- Habitats of Principal Importance for the Conservation of Biological Diversity, or other conservation-notable habitats recorded within 1 km.

5.7.22 At this stage, the site is considered to support priority and conservation notable habitats, and have the potential to support the following protected and/or priority species:

- Bats;
- Breeding birds;
- Dormice;
- Great crested newts;
- Badger;
- Aquatic fauna (otter and water vole);
- Reptiles;
- Terrestrial and aquatic invertebrates; and
- Terrestrial priority species including (but not limited to) brown hare and hedgehog.

5.7.23 These receptors remain scoped in and further detailed survey work and assessment was undertaken in 2019 and continues to be undertaken during the 2020 survey season in accordance with best practice survey guidance. Results from the suite of surveys will further inform the baseline and the assessment of potentially significant effects on receptors.

5.7.24 In respect of protected species and the nearby Mendip Woodlands SAC, Mells Valley SAC and various local SSSIs, Wood and Hanon has engaged directly with Natural England. This dialogue continues as additional protected species survey work is a carried (most notably in respect of bats).

5.7.25 Where potentially significant effects are identified, a receptor may be subject to a more detailed 'secondary' assessment within the EcIA designed to characterise those effects more accurately and identify any bespoke mitigation requirements (beyond normal best-practice) that may be required.

5.8 Traffic and transport

Transportation features of Westdown Quarry

5.8.1 The existing planning permissions for Westdown Quarry provide no indication of any restrictions on the volume HGV movements or any restrictions on the quantity of material leaving the site. Notwithstanding this, the existing July 1995 planning permission on the neighbouring Whatley Quarry (reference 109/22/002) states at condition (30) that no more than 4 million tonnes of the total output from the site in any one calendar year shall be transported by road.

5.8.2 As the resumption of working at Westdown Quarry would be to complement existing operations at Whatley Quarry, and allow the latter to focus on the despatch of aggregates by the on-site rail head facility (see Chapter 2 of this Scoping Report), it can be confirmed that it is Hanson's intention

that moving forwards, Whatley and Westdown combined would operate within the limits of the existing condition (3) i.e. no more than 4 million tonnes per annum would be transported from the sites via road.

5.8.3 It has been further confirmed by Hanson that vehicles would access and leave Westdown Quarry via a newly constructed access point located off the Bulls Green Link Road and that vehicles would turn right out of the site, to then travel south towards the A361.

Relevant policies and their implications for scoping

5.8.4 Table 5.16 lists the planning policy guidance and policies that are relevant to the historic environment, and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.16 Relevant policies and their implications – traffic and transport

Policy reference	Implications
National policy:	
National Planning Policy Framework (NPPF, Ministry of Housing, Communities and Local Government, 2019)	National policy issues relative to traffic and transport for all modes of travel, including abnormal loads and conveyance of freight and construction materials.
Local policy:	
Somerset Minerals Plan, Development Plan Document up to 2030 adopted in 2015 **Policy DM9: Minerals transportation**	Planning permission for mineral development will be granted subject to the application demonstrating that the road network serving the proposed site is suitable or can be upgraded to a suitable standard to sustain the proposed volume and nature of traffic without having an unacceptable adverse impact on distinctive landscape features or the character of the countryside or settlements. Particular regard should be given to: a) highway safety; b) alignment; c) proximity to buildings; d) air quality; e) the integrity of the road network including construction and any impacts on capacity; f) disruption to local communities. Proposals for mineral development that will generate significant transport movements must be supported by a Transport Assessment and Travel Plan. The Transport Assessment will need to demonstrate that appropriate consideration has been given to the alternatives to road transport, including rail, as a primary freight transport option. Alternatives to road transport should be pursued if they are demonstrated to be practicable and beneficial
Mendip District Local Plan Part I: Strategy and Policies 2006-2029, adopted in 2014 **Development Policy 9 – Transport Impact of New Development**	The policy states that where appropriate, development proposals must demonstrate how they will improve or maximise the use of sustainable forms of transport (particularly by means other than the private car), and shall include, where relevant, the submission of Travel Plans and/or Transport Assessments.

Legislation

5.8.5 The following legislation is relevant to the assessment of the effects on potential traffic and transport receptors:

- Town and Country Planning (Environmental Impact Assessment) Regulations 2017.

Technical guidance

5.8.6 The technical guidance set out in Table 5.17 is relevant to the assessment of effects on traffic and transport receptors.

Table 5.17 Technical guidance relevant to traffic and transport

Technical Guidance	Summary
Guidance on Transport Assessments (Department for Transport (DfT, 2007) - archived (2014)20	Provides guidance to developers and local authorities about the methodology and scope of Transport Assessments which support planning applications for the construction or changes of use of various types of infrastructure or development. Whilst this has been archived, it is still a point of reference as it has not been replaced by alternative guidance.
Guidelines for the Environmental Assessment of Road Traffic (GEART) (Institute of Environmental Management and Assessment (IEMA))21.	Provides guidance to developers and local authorities for identifying traffic and transport related environmental effects and receptors.

Baseline conditions

5.8.7 Westdown Quarry is not currently operational and it is intended that any future activity at the site would be in lieu of the agreed traffic volumes from the February 1996 Whatley Quarry permission. Therefore, if the HGV traffic from Westdown Quarry and Whatley Quarry combined does not exceed the equivalent of 4 million tonnes per annum, then it follows that the majority of the transportation effects would have already been considered and accepted as part of the February 1996 permission for Whatley Quarry.

5.8.8 Notwithstanding this, it is acknowledged that the resumption of working at Westdown Quarry would result in an altered pattern of distribution for the quarry HGVs. From Westdown, vehicles would travel eastwards along a stretch of the Bulls Green Link Road for ~ 1 km, before travelling in a southerly direction along Whatley Road to the A361. Traffic turning onto and off the Bulls Green Link Road would come from a route that is already used by the permitted Whatley traffic. Only the ~1 km stretch along the Bulls Green Link Road represents a new part of the vehicles' route, and as such, it is only this part of the network which is considered requires assessment in the EIA.

5.8.9 There are no properties or sensitive locations on the Bulls Green Link Road. Thereafter, as traffic travels in a southerly direction to the A361, which as noted above represents the route that permitted traffic from Whatley Quarry already travels to the strategic road network, which in itself is designed to accommodate this type of traffic.

[20] Department for Transport (2007). *Guidance on Transport Assessment* [online]. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/263054/guidance-transport-assessment.pdf [Accessed 13 February 2020].
[21] Institute of Environmental Assessment (1993). *Guidance Notes No. 1 - Guidelines for the Environmental Assessment of Road Traffic*. Horncastle: F.W.Cupit.

The scope of the assessment

Assessment methodology

5.8.10 The Institute of Environmental Assessment (IEA22) publication Guidance Notes No. 1: Guidelines for the Environmental Assessment of Road Traffic (1993), hereafter referred to as GEART, provide guidance on the environmental assessment of traffic and transportation effects.

5.8.11 To define the scale and extent of an assessment, the IEMA guidelines identify the following rules by which to undertake an assessment of potentially significant traffic and transport related environmental effects:

- Rule One: Include roads where traffic flows are predicted to increase by more than 30% (or where the number of HGVs are predicted to increase by more than 30%); and
- Rule Two: Include any specifically 'sensitive' areas where traffic flows are predicted to increase by 10% or more.

5.8.12 The 10% threshold in Rule two considers daily variations in traffic levels which are typically around 10% meaning that an increase in traffic levels of less than 10% is not likely to have an undesirable effect and would not require assessment.

5.8.13 The IEMA guidelines identify general thresholds for traffic flow increases as identified above. Where the predicted increase in traffic flows is lower than the thresholds, the guidelines suggest the significance of effects can be stated to be low or insignificant and further detailed assessments are not required. Table 5.18 below summarises the significance criteria based on Rule One and Rule Two above.

Table 5.18 Traffic and transport environmental assessment significance criteria

Parameter of assessment	Significance
Change in traffic flows and HGVs over 30%	Significant
Change in total traffic flows over 10% in sensitive areas	Significant
Change in traffic flows and HGVs below 30%	Not significant
Change in total traffic flows less than 10% in sensitive areas	Not significant

5.8.14 The significance of each effect will be considered against the criteria within the IEMA guidelines, where possible. However, the IEMA guidelines state that:

"…for many effects there are no simple rules or formulae which define the thresholds of significance and there is, therefore, a need for interpretation and judgement on the part of the assessor, backed-up by data or quantified information wherever possible. Such judgements will include the assessment of the numbers of people experiencing a change in environmental impact as well as the assessment of the damage to various natural resources."

5.8.15 The IEMA guidelines also state that:

[22] Now the Institute of Environmental Management and Assessment (IEMA)

"…the detailed assessment of impacts is…likely to concentrate on the period during which the absolute level of an impact is at its peak, as well as the hour at which the greatest level of change is likely to occur."

5.8.16 For Westdown Quarry, the assessment methodology (adopting that advocated by the IEMA guidelines) includes evaluating the items listed below, for the proposed development:

- Potential effects on Bulls Green Link Road and the users of this roads, including public transport users, pedestrians and cyclists. As noted above, it is not considered that any other part of the network requires assessment as (i) there will be no increase in traffic levels from that already permitted at Whatley Quarry; and (ii) once traffic reaches Whatley Road and travels in a southerly direction to the A361, its effectively travelling along a route already utilised by traffic coming from Whatley (and as such, has already been assessed); and
- Potential effects on land uses and environmental resources fronting Bulls Green Link Road, including the relevant occupiers and users.

5.8.17 The receptors selected for the assessment will be agreed with the Highways Authority and be based on the highways links that could be subject to a change in traffic flows as a result of the reactivation of Westdown Quarry. The change in traffic characteristics and volumes on the local highway network will largely be because of traffic reassignment when the quarry is re-opened (given that overall existing permitted HGV levels are not anticipated to be exceeded).

5.8.18 Where, following initial assessment, it is apparent that Rule 1 (and potentially Rule 2) parameters are met, assessment will be carried out considering the traffic related effects outlined in Table 5.19.

Table 5.19 Traffic related environmental effects

Noise	Fear and Intimidation
Vibration	Accidents and Safety
Visual Effects	Hazardous Loads
Severance	Air Pollution
Driver Delay	Dust and Dirt
Pedestrian Delay	Ecological Effects
Pedestrian Amenity	Heritage and Conservation

5.8.19 Therefore, the requirements for an ES Chapter would be based upon the above methodology and the anticipated increase in traffic and HGV along an ~1 km stretch of Bulls Green Link Road only.

5.9 Historic environment

Relevant policies and their implications for scoping

5.9.1 Table 5.20 lists the planning policy guidance and policies that are relevant to the historic environment, and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.20 Relevant policies and their implications – historic environment

Policy reference	Implications
National policy:	
National Planning Policy Framework (NPPF, Ministry of Housing, Communities and Local Government, 2019) Para. 189	As a minimum, the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.
NPPF, Para. 193	When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.
NPPF, Para. 194	Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of: a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional; b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional. NB: Non-designated heritage assets of archaeological interest, which are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.
NPPF, Para. 195	Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss.
NPF, Para. 197	The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.
NPPF, Para. 198	Local planning authorities should not permit the loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred.
Local policy:	
Mendip District Local Plan Part I: Strategy and Policies 2006-2029, adopted in 2014 **DP3: Heritage Conservation**	Proposals and initiatives will be supported which preserve and, where appropriate, enhance the significance and setting of the district's Heritage Assets, whether statutorily or locally identified, especially those elements which contribute to the distinct identity of Mendip. Proposals affecting a Heritage Asset in Mendip will be required to: a) Demonstrate an understanding of the significance of the Heritage Asset and/or its setting by describing it in sufficient detail to determine its historic, archaeological, architectural or artistic interest to a level proportionate with its importance. b) Justify any harm to a Heritage Asset and demonstrate the overriding public benefits which would outweigh the damage to that Asset or its setting. The greater the harm to the significance of the Heritage Asset, the greater justification and public benefit that will be required before the application could gain support. 2. Opportunities to mitigate or adapt to climate change and secure sustainable development through the re-use or adaptation of Heritage Assets to minimise the consumption of building materials and energy and the generation of construction waste should be identified. However, mitigation and adaptation will only be considered where there is no harm to the significance of a Heritage Asset. 3. Proposals for enabling development necessary to secure the future of a Heritage Asset which would otherwise be contrary to the policies of this plan or national policy will be carefully assessed against the policy statement produced by English Heritage – Enabling Development and the Conservation of Significant Places.

Policy reference	Implications
Mendip District Local Plan Part I: Strategy and Policies 2006-2029, adopted in 2014 **DP4: Mendip's Landscapes**	Mendip district is defined by its landscapes. Proposals for development that would, individually or cumulatively, significantly degrade the quality of the local landscape will not be supported. Any decision-making will take into account efforts made by applicants to avoid, minimise and/or mitigate negative impacts and the need for the proposal to take place in that location. The following criteria will be applied in relation to particular landscape designations present in the district: 3. Outside of designated landscape areas, proposals should demonstrate that their siting and design are compatible with the pattern of natural and man-made features of the Landscape Character Areas, including cultural and historical associations, as detailed in the "Landscape Assessment of Mendip District."
Somerset Minerals Plan, Development Plan Document up to 2030 adopted in 2015 **Policy DM3: Historic Environment**	Planning permission for mineral development will be granted subject to the application demonstrating that: a) the proposed development will not generate unacceptable adverse impacts on the historic environment or where an adverse impact or impacts have been identified, these can be adequately mitigated; and b) for proposals that impact on the integrity, character or setting of a heritage asset, impacts have been adequately considered by desk-based assessment and field evaluation and with reference to the Somerset Historic Environment Record and the records of designated heritage assets held by English Heritage; and c) adequate provision will be made for the preservation in-situ or excavation of the asset as appropriate, in discussion with the county archaeologist, and the recording of relevant information to advance understanding of the asset. The weight of protection afforded to a heritage asset will reflect the significance of the asset including, but not limited to, its statutory designation(s).

Legislation

5.9.2 Heritage assets that are deemed to be of particular importance are given legal protection through legislation. The primary legislation relating to the historic environment is:

- The Ancient Monuments and Archaeological Areas Act 1979 which provides for a schedule of monuments which are protected; and
- The Planning (Listed Buildings and Conservation Areas) Act 1990 which provides for the definition and protection of listed buildings and their settings and for conservation areas.

Technical guidance

5.9.3 The Government Planning Practice Guidance (PPG) website provides guidance for various disciplines and stages of the planning process and this has been accessed in relation to '*conserving and enhancing the historic environment*' and for '*Environmental Impact Assessment*' (EIA). Further guidance documents referred to for this work consists of the English Heritage (now Historic England) *Mineral Extraction and Archaeology: A Practice Guide* (English Heritage, 2008) and the Historic Environment Good Practice Advice in Planning (GPA) documents on *Managing Significance in Decision-Taking in the Historic Environment* (Historic England, 2015) and *The Setting of Heritage Assets (2nd Edition)* (Historic England, 2017).

Baseline conditions

Data sources

5.9.4 Data relating to the historic environment has been gathered for an area spanning 1km from the site boundary (hereafter the study area) in order to investigate the archaeological potential within the site and its context within the surrounding landscape and historic environment. Data gathered

includes designated assets as recorded within the National Heritage List for England (NHLE) as curated by Historic England including:

- World Heritage Sites;
- Scheduled Monuments;
- Listed Buildings;
- Registered Parks and Gardens; and
- Registered Battlefields.

5.9.5 Conservation Areas which are also protected by legislation were also checked via the Somerset Historic Environment Record (HER) as managed by the South West Heritage Trust. A list of non-designated assets and previous archaeological events were also obtained from the HER with additional research being obtained from the following sources:

- Historic mapping, aerial images and documentation held by The Somerset Archives and Local Studies Service;
- The British Geological Survey (BGS); and
- Online and documentary sources as appropriate.

Summary of baseline conditions

5.9.6 The data gathered demonstrated that there are no designated assets contained within the site although five HER records are present.

5.9.7 Within the study area there is one Grade II* registered park and garden, The Chantry (NHLE 1001140), the Nunney Conservation Area, the Grade I listed Church of the Holy Trinity (NHLE 134503), three Grade II* listed buildings and 12 Grade II listed buildings present. These designated assets all relate to the post medieval period. The HER search produced a further 83 records beyond the site boundary and within the study area. These records consist of archaeological sites, standing structures, the locations of former buildings as well as spot finds.

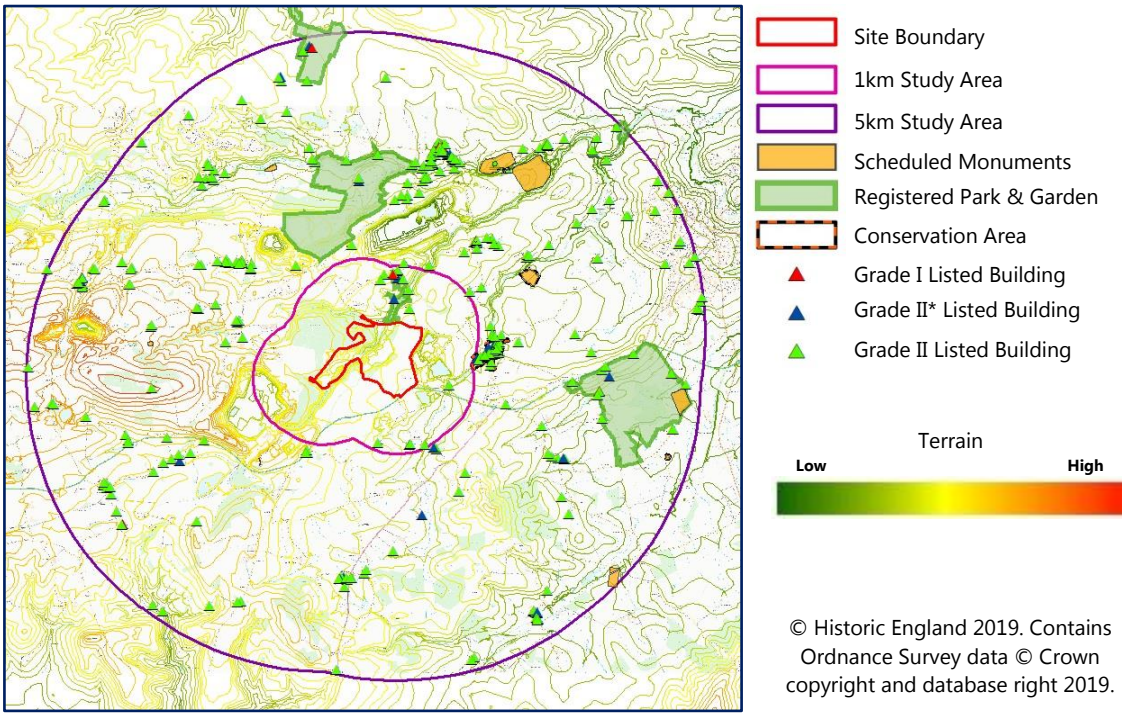
5.9.8 Twenty previous archaeological events have taken place within the study area although none of these are within the site boundary, these range from watching briefs and geophysical surveys through to full excavations producing varying degrees of archaeological evidence.

5.9.9 With regards to the setting of heritage assets, the NHLE was checked out to 5 km from the site boundary and compared to the terrain of the area to assess potential visibility and impact as shown in Figure 5.4. These initial investigations noted that most assets beyond 1 km are unlikely to have visibility of the site and are sufficiently far enough away that noise in unlikely to impact upon them to more than a negligible level. Two areas have however been identified as requiring further consideration:

- The Grade II listed Cranmore Tower, which is located at the highest point within the surrounding landscape, located c.2.8 km to the west of the site. This asset, completed in 1865, is currently a tourist attraction that offers access to the top of the tower providing 360 degree views from this location, in which Westdown Quarry is likely to appear; and
- Nunney Conservation area, particularly the Grade II* listed Rockfield House and Service Buildings (NHLE 1058309) and the scheduled Nunney Castle (NHLE 1014716). The conservation area and castle are located c.1.3km to the east of the site and due to their proximity noise and limited visibility may require further assessment. Rockfield House especially is located on the

edge of the area in an elevated position and as such this is considered to have the highest potential for views out towards the site.

Figure 5.4 Designated assets and terrain map



Predicted trends

5.9.10 There are not expected to by any changes which would affect the baseline conditions in the absence of the development.

The scope of the assessment

Assessment methodology

5.9.11 Effects on the historic environment can comprise direct and indirect effects.

5.9.12 Direct effects arise from physical disturbance caused by construction activities. They primarily occur during the construction phase of a development and are permanent and irreversible, but restricted to the works footprint.

5.9.13 Parts of the site have been previously subject to quarrying, and it is assumed that all features of archaeological interest within this area have been removed. Other parts of the site appear not to have been affected and remain in use as agricultural fields. Effects on known heritage assets will therefore be considered only where these are located within the footprint of the site, and in locations which have not already been subject to quarrying.

5.9.14 There is potential for previously unrecorded heritage assets to be present within the site boundary and to be directly affected by the proposed development. These effects will be considered in the ES with reference to a characterisation of the potential presence of such heritage assets. Information on known non-designated heritage assets within a study area extending up to 500 m from the site boundary will be used to identify the archaeological potential of the site, and additional relevant contextual information will be taken into account.

5.9.15 Indirect effects arise where a development harms heritage assets without causing direct disturbance; primarily arising from change in the setting of heritage assets. The nature of the development, location and nature of the designated assets within a close village setting in the case of the listed buildings and Conservation Area, means that potential significant indirect effects are anticipated in respect of The Grade II listed Cranmore Tower and Nunney Conservation Area. Such effects will be considered further in the ES.

Potential effects not requiring further assessment

5.9.16 Potential effects not requiring further assessment are identified as follows:

- Direct effects on heritage assets within the areas that have previously been subject to quarrying are scoped out of further assessment; and
- Direct effects on heritage assets outside the footprint of the proposed development are scoped out.

5.10 Socio-economics

Relevant policies and their implications for scoping

5.10.1 Table 5.21 lists the planning policy guidance and policies that are relevant to socio-economic effects and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.21 Relevant policies and their implications – socio-economics

Policy reference	Implications
National policy:	
National Planning Policy Framework, 2019 (NPPF) Section 6. Building a strong, competitive economy NPPF Paragraph 80	The NPPF at Paragraph 80 states that "Planning policies and decisions should help create the conditions in which businesses can invest, expand and adapt. Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development."
NPPF 2019 Paragraph 83.	Under the 'Supporting a prosperous rural economy' section, The NPPF at Paragraph 83 states that "planning policies and decisions should enable: the sustainable growth and expansion of all types of business in rural areas."
NPPF Section 17. Facilitating the sustainable use of Minerals Paragraph 203.	States that it is essential that there is sufficient supply of minerals to provide the infrastructure, buildings, energy and goods to support the country's needs and best use needs to made of mineral resources.
NPPF Paragraph 205.	Paragraph 205 states that great weight should be given to the benefits of mineral extraction, including to the economy when determining planning applications.
Local Policy	
Mendip Local Plan 2006-2029: Part I: Strategy and Policies (Adopted 2014) Core Policy 3	Core Policy 3: Supporting Business Development and Growth sets out the approach to achieving sustainable economic growth in the District.

Legislation

5.10.2 There is no specific legislation pertaining to the assessment of socio-economic effects that will require consideration in the EIA.

Baseline conditions

Data sources

5.10.3 The assessment of socio-economic issues will draw upon information from the following data sources:

- The existing and emerging development plan and its associated evidence base;
- The Somerset Economic Assessment (2016) and any associated updates; and
- Statistics (where required) provided by the NOMIS and ONS websites.

Summary of baseline conditions

5.10.4 Hanson is a well-established company who currently employ over 3,500 people across the UK. The company's existing operations at Whatley Quarry mean that Hanson is already an important local employer in its own right, currently directly supporting some 60 people directly, along with a range of support staff and contractors.

Predicted trends

5.10.5 Whilst there are not expected to by any 'external' changes which would affect the baseline conditions, in the absence of the recommencement of extraction at Westdown, without the flexibility to displace road sales from Whatley Quarry, materials needed for key infrastructure projects wouldn't be able to be provided from Whatley alone and alternative supplies would need to be developed.

The scope of the assessment

5.10.6 The resumption of extraction at Westdown Quarry would result in the creation of additional employment opportunities – up 20 directly employed, full time posts. Extraction at Westdown would also contribute to ensuring the longer-term security of Hanson's neighbouring site at Whatley, thereby enabling job retention, which could further influence employment and inward investment in the wider area.

5.10.7 In addition to securing direct employment opportunities at the site, it is envisaged that a number of indirect and induced jobs will continue to be supported, because of the need to service the site. Typically, these relate to the provision of a wide variety of goods and services, including specialist engineering assistance for plant maintenance and contractors for services such as the provision of mobile plant etc.

5.10.8 It is recognised that the re-opening of the quarry could also influence local employment and inward investment. The socio-economic assessment will a will therefore be concerned with:

- Change in the local employment structure and effect on the local employment market;
- Employment opportunities and displacement; and
- Increased local expenditure.

The receptors to be assessed will include existing residents and local employers.

Assessment methodology

5.10.9 The assessment will follow the best practice guidelines for undertaking socio-economic assessments (including The Green Book: Appraisal and Evaluation in Central Government, HM Treasury 2003 and A Standard Approach to Assessing the Additional Impact of Projects, English Partnerships, 2nd edition 2004).

5.11 Land and soils (including agriculture)

Relevant policies and their implications for scoping

5.11.1 Table 5.22 lists the planning policy guidance and policies that are relevant to land and soils effects and sets out the implications of the guidance and policies for the scope of the EIA.

Table 5.22 Relevant policies and their implications – land and soils

Policy reference	Implications
National policy:	
National Planning Policy Framework, 2019 (NPPF) Section 6. Building a strong, competitive economy NPPF Paragraph 170	The NPPF at Paragraph 170 states that planning policies and decisions should contribute to and enhance the natural and local environment by: "……. *b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and* ***other benefits of the best and most versatile agricultural land****, and of trees and woodland;……"*
Local policy:	
Somerset Minerals Plan, Development Plan Document up to 2030 adopted in 2015 **Policy DM7: Restoration and aftercare**	This policy states that planning permission for mineral development will be granted subject to the applicant submitting restoration and after-use proposals, which: *"a) clearly state how the criteria in the reclamation checklist (Table 7) have been met; and b) include satisfactory information on the financial budget for restoration and after-use, including how provision for this work will be made during the operational life of the site. Restoration proposals will be subject to a five-year period of aftercare. Where proposals require a longer period of management, the proposal will only be permitted if it includes details of how this will be achieved."* Importantly, criterion (3) in Table 7 requires that soils must be carefully conserved for use in restoration. Furthermore, where quarrying operations have been permitted on agricultural land the land should be restored to its former quality wherever technically practicable, using materials native to the site.

Legislation

5.11.2 There is no specific legislation pertaining to the assessment of land and soil effects that will require consideration in the EIA.

Baseline conditions

Data sources

5.11.3 The assessment of soil and land issues will draw upon information from the following data sources:

- *Agricultural Land Classification Map South West Region (ALC006)* published by Natural England on 24 August 2010 (uploaded on the Natural England website on 2011/11/18); and
- *Provisional Agricultural Land Classification (ALC),* published by: Natural England, last updated: 09 April 2019.

Summary of baseline conditions

5.11.4 The proposals relate to the resumption of working at an existing, permitted quarry. No new land take is required as part of the proposals and the quarry was last worked in the late 1980s. Whilst a large portion (approximately over half) of the site has been disturbed by historic extraction operations, the remainder – which comprises approximately six agricultural fields in the south-eastern part of the site - remains undisturbed and under agricultural tenancy.

5.11.5 Preliminary consultation of Natural England's *Agricultural Land Classification Map South West Region (ALC006)* (August 2010) indicates that these agricultural fields are of grade 3 quality i.e. good to moderate land. This same classification is provided in the updated *Provisional Agricultural Land Classification (ALC)*, also published by Natural England (April 2019).

5.11.6 The Government defines *best and most versatile agricultural land* as that within ALC 1, 2 or 3a. At this stage, it is unknown as to whether the agricultural land within Westdown Quarry is grade 3a or 3b and further survey work is required to determine this.

Predicted trends

5.11.7 There are not expected to by any changes which would affect the baseline conditions in the absence of the development.

The scope of the assessment

5.11.8 It is proposed that the focus of the land and soils assessment would be on assessing the quality of the remainder of the agricultural land which would be disturbed by the recommencement of extraction operations at Westdown Quarry. Additional survey work will be required to determine whether the land is of ALC grade 3a or 3b. Such survey work would then inform mitigation surrounding the handling, storage and placement of soils both during the extraction and restoration phases.

5.12 Cumulative effects

5.12.1 There is a requirement under Schedule 4 of the EIA Regulations for the ES to include a description of the likely significant effects of a development on the environment, which should cover, amongst others, cumulative effects. As such, an assessment of potential cumulative effects will be undertaken for the proposed development. The assessment will consider two aspects:

- **Inter-project cumulative effects:** A qualitative assessment considering potential cumulative effects with other existing, permitted and proposed mineral developments in the area; and
- **Intra-project cumulative effects:** A qualitative assessment as to whether any of the individual effects of the proposed development would combine to create a cumulative effect greater than the sum of the individual effects.

5.12.2 We will seek to agree the other developments to be scoped in to the assessment of inter-development cumulative effects with Somerset County Council, however at this stage it is proposed that the following active quarry sites are scoped into the assessment:

- Whatley Quarry (Hanson);
- Torr Works (Aggregate Industries);
- Halecombe Quarry (Tarmac); and
- Colemans Quarry (Holwell).

5.12.3 In terms of intra-project cumulative effects, typically, the main focus of such an assessment relates to amenity topics, such as those that affect human receptors, i.e. noise, vibration, traffic, air quality and visual amenity, although it can also relate to other topics where a receptor can be subject to effects from more than one environmental topic, e.g. biodiversity and hydrology.

5.13 Topics scoped out from detailed assessment

Climate

5.13.1 The effects on climate will be considered within the chapter assessing the hydrology/hydrogeology and flood risk. It is therefore not considered that a separate chapter on climate is required.

Major accidents and disasters

5.13.2 The proposed development will take place at an existing, permitted (albeit dormant) quarry. All quarries in the UK are heavily regulated under health and safety and quarry regulations. Furthermore, the proposed development is not located in area anticipated to be at risk of major accidents or disasters. The vulnerability to flood risk will be assessed in the Flood Risk Assessment for the proposed development and the Water Environment ES chapter. It is therefore proposed that major accidents and disasters are scoped out of the EIA.

6. Summary of proposed EIA scope

As set out in the preceding sections, the EIA for the review of the consents at Westdown Quarry will include detailed assessments on the following topics:

- Landscape and visual;
- Noise;
- Vibration;
- Air quality;
- Water environment;
- Biodiversity;
- Traffic and transport;
- Historic environment;
- Socio-economics;
- Land and soils (including agriculture); and
- Cumulative effects.

The ES will consider the significant issues in more detail and will report on further investigations in relation to the above.

Wood and Hanson would welcome comments on the proposed scope of the EIA and for any suggestions on potential mitigation and enhancement that can be incorporated into the proposed development as we proceed through the EIA process.

Figures

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369000 370000 371000 372000 373000 374000

147000 146000 145000 144000 143000

N

Barns Close Quarry
Finger Farm
Whatley
The Bushes
Lower Whatley
Leigh upon Mendip
Rookery Farm
Old School House
Knaphill Farm
Chantry
Mendip View
Southfield House
Tadhill
Tadhill Farm
Tadhill House Farm
Green Farm
Bangle Farm
Asham Wood
Downhead
Little Manor
Lodge Hill Manor
Nunney
Side Hill
Westdown Farm
Holwell
Holwell Hill
Nunney Catch
Tonigre Cottage
A361
Broadgrove House
Cloford
Leighton
Wayback
Cloford Common Farm
Postlebury Farm
Monk Wood
Beanstand Farm
The Oaks
Long Lane House
A359
Alice Street Farm
Mitchell's Elm Farm
Warburton House Farm
Postlebury

Key

Westdown Quarry

0 250 500 750 1,000 m

Scale at A3: 1:20,000

Westdown Quarry Scoping Support

Figure 2.1
Site location

May 2020

wood.

370500
371000
371500
372000
146000
145500
145000
144500
N
Stony Lane
Stony Lane
A361
Key
Westdown Quarry
0 100 200 300 400 m
Scale at A3: 1:7,500

Westdown Quarry Scoping Report
Figure 2.2
Site boundary
May 2020
wood.
40380-WOOD-XX-XX-FG-O-0002_S2_P01
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Originator: Steve Holford.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\MapInfo\40380-WOOD-XX-XX-FG-OL-0001_S3_P01 FIGURE 5.1 PRELIMINARY ZTV EXCLUDING SCREENING WITH VIEWPOINT LOCATIONS.wor

Key

- Westdown Quarry site boundary
- 5km buffer from site boundary
- AONB
- Viewpoint location (day)
- Viewpoint location (night)
- Zone of Theoretical Visibility

Note:
The ZTV takes no account of the screening effects of buildings or vegetation.

The ZTV shows where the surface of the existing site may theoretically be visible from.

0 km 3 km

Scale 1:50,000 @ A3

Hanson UK
Westdown Quarry Scoping Report

Figure 5.1
Preliminary ZTV (excluding screening) with viewpoint locations

May 2020

wood.

Key

- Westdown Quarry site boundary
- 5km buffer from site boundary
- AONB
- Viewpoint location (day)
- Viewpoint location (night)
- Zone of Theoretical Visibility

Note:
Exclusion zones have been mapped using OS Vectormap District boundary data.

Buildings have been modelled at a generic height of 7.5m.

Vegetation has been modelled at a generic height of 10m.

The ZTV shows where the surface of the existing site may theoretically be visible from.

0 km 3 km

Scale 1:50,000 @ A3

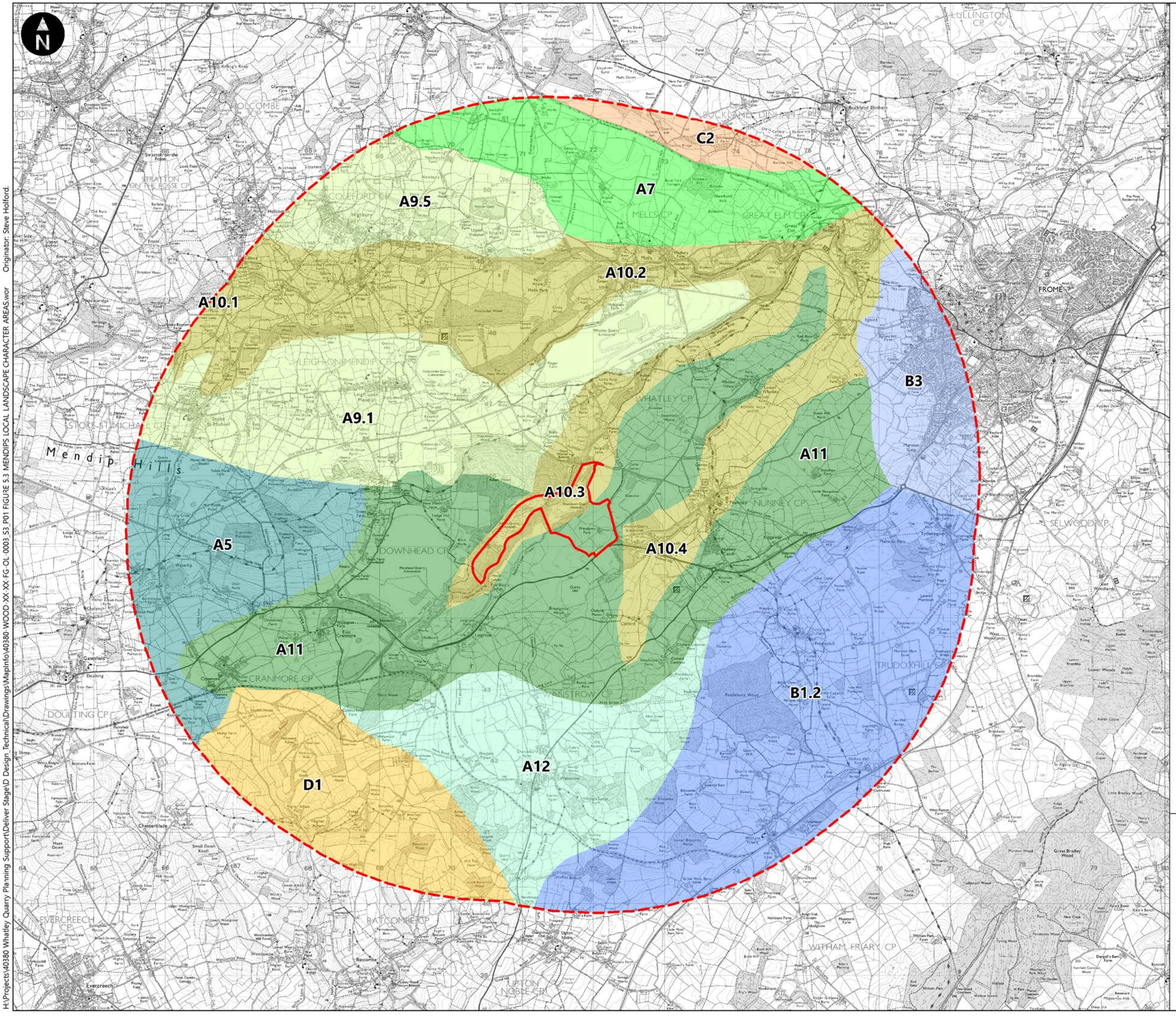
Hanson UK
Westdown Quarry Scoping Report

Figure 5.2
Preliminary ZTV (including screening) with viewpoint locations

May 2020

wood.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\MapInfo\40380-WOOD-XX-XX-FG-OL-0002_S3_P01 FIGURE 5.2 PRELIMINARY ZTV INCLUDING SCREENING WITH VIEWPOINT LOCATIONS.wor Originator: Steve Holford.



Key

- Westdown Quarry site boundary
- 5km buffer from site boundary

Mendips Local Landscape Character Areas

- A5 - Cranmore Ridge
- A7 - Northern and Eastern Farmlands
- A9 - Leigh / Binegar / Coleford Slopes
  - A9.1 - Leigh-Oakhill
  - A9.5 - Holcome-Highbury-Coleford
- A10 - East Mendip Valleys
  - A10.1 - Nettlebridge Valley
  - A10.2 - The Lower Mells River Valley
  - A10.3 - Chantry and Fordbury Water Valley
  - A10.4 - Nunney, Nunney Brook and Egford Brook
- A11 - South East Farmlands
- A12 - Wanstrow Farmlands
- B1 - The Upper Frome Valley
  - B1.2 - Valley Slopes
- B3 - Frome and Frome Fringes
- C2 - Buckland / Norton St Philip / Orchardleigh Park Ridges
- D1 - The Downs, Slopes and Valley Heads

0 km 3 km

Scale 1:50,000 @ A3

Hanson UK
Westdown Quarry Scoping Report

Figure 5.3
Mendips Local Landscape Character Areas

May 2020

wood.

Originator: Steve Holford.

H:\Projects\40380 Whatley Quarry Planning Support\Deliver Stage\D Design_Technical\Drawings\MapInfo\40380 WOOD XX XX FG GL 0003_S3_P01 FIGURE 5.3 MENDIPS LOCAL LANDSCAPE CHARACTER AREAS.wor